

SEQUENCE LISTING

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<110> Hardie, David Grahame
Alessi, Dario
Boudeau, Jerome

<120> Methods For Use of An LKb1/Strad7M025 Complex

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<150> PCT/GB2004/003096

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<150> GB 0316725.1

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<151> 2003-12-20

<160> 158

<170> PatentIn version 3.1

<210> 1

<211> 550

<212> PRT

<213> Homo sapiens

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Met Ala Thr Ala Glu Lys Gln Lys His Asp Gly Arg Val Lys Ile Gly
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His Tyr Ile Leu Gly Asp Thr Leu Gly Val Gly Thr Phe Gly Lys Val
20 25 30

Lys Val Gly Lys His Glu Leu Thr Gly His Lys Val Ala Val Lys Ile
35 40 45

Leu Asn Arg Gln Lys Ile Arg Ser Leu Asp Val Val Gly Lys Ile Arg
50 55 60

Arg Glu Ile Gln Asn Leu Lys Leu Phe Arg His Pro His Ile Ile Lys
65 70 75 80

Leu Tyr Gln Val Ile Ser Thr Pro Ser Asp Ile Phe Met Val Met Glu
85 90 95

Tyr Val Ser Gly Gly Glu Leu Phe Asp Tyr Ile Cys Lys Asn Gly Arg
100 105 110

Leu Asp Glu Lys Glu Ser Arg Arg Leu Phe Gln Gln Ile Leu Ser Gly
115 120 125

Val Asp Tyr Cys His Arg His Met Val Val His Arg Asp Leu Lys Pro
130 135 140

Glu Asn Val Leu Leu Asp Ala His Met Asn Ala Lys Ile Ala Asp Phe
145 150 155 160

Gly Leu Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr Ser Cys
165 170 175

Gly Ser Pro Asn Tyr Ala Ala Pro Glu Val Ile Ser Gly Arg Leu Tyr
180 185 190

Ala Gly Pro Glu Val Asp Ile Trp Ser Ser Gly Val Ile Leu Tyr Ala
195 200 205

Leu Leu Cys Gly Thr Leu Pro Phe Asp Asp Asp His Val Pro Thr Leu
210 215 220

Phe Lys Lys Ile Cys Asp Gly Ile Phe Tyr Thr Pro Gln Tyr Leu Asn
225 230 235 240

Pro Ser Val Ile Ser Leu Leu Lys His Met Leu Gln Val Asp Pro Met
245 250 255

Lys Arg Ala Thr Ile Lys Asp Ile Arg Glu His Glu Trp Phe Lys Gln
260 265 270

Asp Leu Pro Lys Tyr Leu Phe Pro Glu Asp Pro Ser Tyr Ser Ser Thr
275 280 285

Met Ile Asp Asp Glu Ala Leu Lys Glu Val Cys Glu Lys Phe Glu Cys
290 295 300

Ser Glu Glu Glu Val Leu Ser Cys Leu Tyr Asn Arg Asn His Gln Asp
305 310 315 320

Pro Leu Ala Val Ala Tyr His Leu Ile Ile Asp Asn Arg Arg Ile Met
325 330 335

Asn Glu Ala Lys Asp Phe Tyr Leu Ala Thr Ser Pro Pro Asp Ser Phe
340 345 350

Leu Asp Asp His His Leu Thr Arg Pro His Pro Glu Arg Val Pro Phe
355 360 365

Leu Val Ala Glu Thr Pro Arg Ala Arg His Thr Leu Asp Glu Leu Asn
370 375 380

Pro Gln Lys Ser Lys His Gln Gly Val Arg Lys Ala Lys Trp His Leu
385 390 395 400

Gly Ile Arg Ser Gln Ser Arg Pro Asn Asp Ile Met Ala Glu Val Cys
405 410 415

Arg Ala Ile Lys Gln Leu Asp Tyr Glu Trp Lys Val Val Asn Pro Tyr
420 425 430

Tyr Leu Arg Val Arg Arg Lys Asn Pro Val Thr Ser Thr Tyr Ser Lys
435 440 445

Met Ser Leu Gln Leu Tyr Gln Val Asp Ser Arg Thr Tyr Leu Leu Asp
450 455 460

Phe Arg Ser Ile Asp Asp Glu Ile Thr Glu Ala Lys Ser Gly Thr Ala
465 470 475 480

Thr Pro Gln Arg Ser Gly Ser Val Ser Asn Tyr Arg Ser Cys Gln Arg
485 490 495

Ser Asp Ser Asp Ala Glu Ala Gln Gly Lys Ser Ser Glu Val Ser Leu
500 505 510

Thr Ser Ser Val Thr Ser Leu Asp Ser Ser Pro Val Asp Leu Thr Pro
515 520 525

Arg Pro Gly Ser His Thr Ile Glu Phe Phe Glu Met Cys Ala Asn Leu
530 535 540

Ile Lys Ile Leu Ala Gln
545 550

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<211> 550
<212> PRT
<213> Homo sapiens

<400> 2

Met Ala Thr Ala Glu Lys Gln Lys His Asp Gly Arg Val Lys Ile Gly
1 5 10 15

His Tyr Ile Leu Gly Asp Thr Leu Gly Val Gly Thr Phe Gly Lys Val

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		35					40					45			
Leu	Asn	Arg	Gln	Lys	Ile	Arg	Ser	Leu	Asp	Val	Val	Gly	Lys	Ile	Arg
	50					55					60				
Arg	Glu	Ile	Gln	Asn	Leu	Lys	Leu	Phe	Arg	His	Pro	His	Ile	Ile	Lys
65					70					75					80
Leu	Tyr	Gln	Val	Ile	Ser	Thr	Pro	Ser	Asp	Ile	Phe	Met	Val	Met	Glu
				85					90					95	
Tyr	Val	Ser	Gly	Gly	Glu	Leu	Phe	Asp	Tyr	Ile	Cys	Lys	Asn	Gly	Arg
			100					105					110		
Leu	Asp	Glu	Lys	Glu	Ser	Arg	Arg	Leu	Phe	Gln	Gln	Ile	Leu	Ser	Gly
	115						120					125			
Val	Asp	Tyr	Cys	His	Arg	His	Met	Val	Val	His	Arg	Asp	Leu	Lys	Pro
	130					135					140				
Glu	Asn	Val	Leu	Leu	Asp	Ala	His	Met	Asn	Ala	Lys	Ile	Ala	Asp	Phe
145					150					155					160
Gly	Leu	Ser	Asn	Met	Met	Ser	Asp	Gly	Glu	Phe	Leu	Arg	Thr	Ser	Cys
				165					170					175	
Gly	Ser	Pro	Asn	Tyr	Ala	Ala	Pro	Glu	Val	Ile	Ser	Gly	Arg	Leu	Tyr
			180					185					190		
Ala	Gly	Pro	Glu	Val	Asp	Ile	Trp	Ser	Ser	Gly	Val	Ile	Leu	Tyr	Ala
		195					200					205			
Leu	Leu	Cys	Gly	Thr	Leu	Pro	Phe	Asp	Asp	Asp	His	Val	Pro	Thr	Leu
	210					215					220				
Phe	Lys	Lys	Ile	Cys	Asp	Gly	Ile	Phe	Tyr	Thr	Pro	Gln	Tyr	Leu	Asn
225					230					235					240
Pro	Ser	Val	Ile	Ser	Leu	Leu	Lys	His	Met	Leu	Gln	Val	Asp	Pro	Met
				245					250					255	

Lys Arg Ala Ser Ile Lys Asp Ile Arg Glu His Glu Trp Phe Lys Gln
260 265 270

Asp Leu Pro Lys Tyr Leu Phe Pro Glu Asp Pro Ser Tyr Ser Ser Thr
275 280 285

Met Ile Asp Asp Glu Ala Leu Lys Glu Val Cys Glu Lys Phe Glu Cys
290 295 300

Ser Glu Glu Glu Val Leu Ser Cys Leu Tyr Asn Arg Asn His Gln Asp
305 310 315 320

Pro Leu Ala Val Ala Tyr His Leu Ile Ile Asp Asn Arg Arg Ile Met
325 330 335

Asn Glu Ala Lys Asp Phe Tyr Leu Ala Thr Ser Pro Pro Asp Ser Phe
340 345 350

Leu Asp Asp His His Leu Thr Arg Pro His Pro Glu Arg Val Pro Phe
355 360 365

Leu Val Ala Glu Thr Pro Arg Ala Arg His Thr Leu Asp Glu Leu Asn
370 375 380

Pro Gln Lys Ser Lys His Gln Gly Val Arg Lys Ala Lys Trp His Leu
385 390 395 400

Gly Ile Arg Ser Gln Ser Arg Pro Asn Asp Ile Met Ala Glu Val Cys
405 410 415

Arg Ala Ile Lys Gln Leu Asp Tyr Glu Trp Lys Val Val Asn Pro Tyr
420 425 430

Tyr Leu Arg Val Arg Arg Lys Asn Pro Val Thr Ser Thr Tyr Ser Lys
435 440 445

Met Ser Leu Gln Leu Tyr Gln Val Asp Ser Arg Thr Tyr Leu Leu Asp
450 455 460

Phe Arg Ser Ile Asp Asp Glu Ile Thr Glu Ala Lys Ser Gly Thr Ala
465 470 475 480

Thr Pro Gln Arg Ser Gly Ser Val Ser Asn Tyr Arg Ser Cys Gln Arg
485 490 495

Ser Asp Ser Asp Ala Glu Ala Gln Gly Lys Ser Ser Glu Val Ser Leu
500 505 510

Thr Ser Ser Val Thr Ser Leu Asp Ser Ser Pro Val Asp Leu Thr Pro
515 520 525

Arg Pro Gly Ser His Thr Ile Glu Phe Phe Glu Met Cys Ala Asn Leu
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Ile Lys Ile Leu Ala Gln
545 550

<210> 3
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<212> PRT
<213> Homo sapiens

<400> 3

Met Ala Thr Ala Glu Lys Gln Lys His Asp Gly Arg Val Lys Ile Gly
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His Tyr Ile Leu Gly Asp Thr Leu Gly Val Gly Thr Phe Gly Lys Val
20 25 30

Lys Val Gly Lys His Glu Leu Thr Gly His Lys Val Ala Val Lys Ile
35 40 45

Leu Asn Arg Gln Lys Ile Arg Ser Leu Asp Val Val Gly Lys Ile Arg
50 55 60

Arg Glu Ile Gln Asn Leu Lys Leu Phe Arg His Pro His Ile Ile Lys
65 70 75 80

Leu Tyr Gln Val Ile Ser Thr Pro Ser Asp Ile Phe Met Val Met Glu
85 90 95

Tyr Val Ser Gly Gly Glu Leu Phe Asp Tyr Ile Cys Lys Asn Gly Arg
100 105 110

Leu Asp Glu Lys Glu Ser Arg Arg Leu Phe Gln Gln Ile Leu Ser Gly

115				120				125							
Val	Asp	Tyr	Cys	His	Arg	His	Met	Val	Val	His	Arg	Asp	Leu	Lys	Pro
	130					135					140				
Glu	Asn	Val	Leu	Leu	Asp	Ala	His	Met	Asn	Ala	Lys	Ile	Ala	Asp	Phe
145					150					155					160
Gly	Leu	Ser	Asn	Met	Met	Ser	Asp	Gly	Glu	Phe	Leu	Arg	Thr	Ser	Cys
				165					170					175	
Gly	Ser	Pro	Asn	Tyr	Ala	Ala	Pro	Glu	Val	Ile	Ser	Gly	Arg	Leu	Tyr
			180					185					190		
Ala	Gly	Pro	Glu	Val	Asp	Ile	Trp	Ser	Ser	Gly	Val	Ile	Leu	Tyr	Ala
		195					200					205			
Leu	Leu	Cys	Gly	Thr	Leu	Pro	Phe	Asp	Asp	Asp	His	Val	Pro	Thr	Leu
	210					215					220				
Phe	Lys	Lys	Ile	Cys	Asp	Gly	Ile	Phe	Tyr	Thr	Pro	Gln	Tyr	Leu	Asn
225					230					235					240
Pro	Ser	Val	Ile	Ser	Leu	Leu	Lys	His	Met	Leu	Gln	Val	Asp	Pro	Met
				245					250					255	
Lys	Arg	Ala	Ser	Ile	Lys	Asp	Ile	Arg	Glu	His	Glu	Trp	Phe	Lys	Gln
			260					265					270		
Asp	Leu	Pro	Lys	Tyr	Leu	Phe	Pro	Glu	Asp	Pro	Ser	Tyr	Ser	Ser	Thr
		275					280					285			
Met	Ile	Asp	Asp	Glu	Ala	Leu	Lys	Glu	Val	Cys	Glu	Lys	Phe	Glu	Cys
	290					295					300				
Ser	Glu	Glu	Glu	Val	Leu	Ser	Cys	Leu	Tyr	Asn	Arg	Asn	His	Gln	Asp
305					310					315					320
Pro	Leu	Ala	Val	Ala	Tyr	His	Leu	Ile	Ile	Asp	Asn	Arg	Arg	Ile	Met
				325					330					335	
Asn	Glu	Ala	Lys	Asp	Phe	Tyr	Leu	Ala	Thr	Ser	Pro	Pro	Asp	Ser	Phe
			340					345					350		

Leu Asp Asp His His Leu Thr Arg Pro His Pro Glu Arg Val Pro Phe
355 360 365

Leu Val Ala Glu Thr Pro Arg Ala Arg His Thr Leu Asp Glu Leu Asn
370 375 380

Pro Gln Lys Ser Lys His Gln Gly Val Arg Lys Ala Lys Trp His Leu
385 390 395 400

Gly Ile Arg Ser Gln Ser Arg Pro Asn Asp Ile Met Ala Glu Val Cys
405 410 415

Arg Ala Ile Lys Gln Leu Asp Tyr Glu Trp Lys Val Val Asn Pro Tyr
420 425 430

Tyr Leu Arg Val Arg Arg Lys Asn Pro Val Thr Ser Thr Tyr Ser Lys
435 440 445

Met Ser Leu Gln Leu Tyr Gln Val Asp Ser Arg Thr Tyr Leu Leu Asp
450 455 460

Phe Arg Ser Ile Asp Asp Glu Ile Thr Glu Ala Lys Ser Gly Thr Ala
465 470 475 480

Thr Pro Gln Arg Ser Gly Ser Val Ser Asn Tyr Arg Ser Cys Gln Arg
485 490 495

Ser Asp Ser Asp Ala Glu Ala Gln Gly Lys Ser Ser Glu Val Ser Leu
500 505 510

Thr Ser Ser Val Thr Ser Leu Asp Ser Ser Pro Val Asp Leu Thr Pro
515 520 525

Arg Pro Gly Ser His Thr Ile Glu Phe Phe Glu Met Cys Ala Asn Leu
530 535 540

Ile Lys Ile Leu Ala Gln
545 550

<210> 4
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<212> PRT

<213> Homo sapiens

<400> 4

Gly Glu His Gln Leu Thr Gly His Lys Val Ala Val Lys Ile Leu Asn
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Arg Gln Lys Ile Arg Ser Leu Asp Val Val Gly Lys Ile Lys Arg Glu
20 25 30

Ile Gln Asn Leu Lys Leu Phe Arg His Pro His Ile Ile Lys Leu Tyr
35 40 45

Gln Val Ile Ser Thr Pro Thr Asp Phe Phe Met Val Met Glu Tyr Val
50 55 60

Ser Gly Gly Glu Leu Phe Asp Tyr Ile Cys Lys His Gly Arg Val Glu
65 70 75 80

Glu Met Glu Ala Arg Arg Leu Phe Gln Gln Ile Leu Ser Ala Val Asp
85 90 95

Tyr Cys His Arg His Met Val Val His Arg Asp Leu Lys Pro Glu Asn
100 105 110

Val Leu Leu Asp Ala His Met Asn Ala Lys Ile Ala Asp Phe Gly Leu
115 120 125

Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr Ser Cys Gly Ser
130 135 140

Pro Asn Tyr Ala Ala Pro Glu Val Ile Ser Gly Arg Leu Tyr Ala Gly
145 150 155 160

Pro Glu Val Asp Ile Trp Ser Cys Gly Val Ile Leu Tyr Ala Leu Leu
165 170 175

Cys Gly Thr Leu Pro Phe Asp Asp Glu His Val Pro Thr Leu Phe Lys
180 185 190

Lys Ile Arg Gly Gly Val Phe Tyr Ile Pro Glu Tyr Leu Asn Arg Ser
195 200 205

Val Ala Thr Leu Leu Met His Met Leu Gln Val Asp Pro Leu Lys Arg

210		215		220
Ala Thr Ile Lys Asp	Ile Arg Glu His Glu Trp Phe Lys Gln Asp Leu			
225	230	235		240
Pro Ser Tyr Leu Phe	Pro Glu Asp Pro Ser Tyr Asp Ala Asn Val Ile			
	245	250		255
Asp Asp Glu Ala Val Lys Glu Val Cys Glu Lys Phe Glu Cys Thr Glu				
	260	265		270
Ser Glu Val Met Asn Ser Leu Tyr Ser Gly Asp Pro Gln Asp Gln Leu				
	275	280		285
Ala Val Ala Tyr His Leu Ile Ile Asp Asn Arg Arg Ile Met Asn Gln				
	290	295		300
Ala Ser Glu Phe Tyr Leu Ala Ser Ser Pro Pro Ser Gly Ser Phe Met				
	305	310		315
Asp Asp Ser Ala Met His Ile Pro Pro Gly Leu Lys Pro His Pro Glu				
	325	330		335
Arg Met Pro Pro Leu Ile Ala Asp Ser Pro Lys Ala Arg Cys Pro Leu				
	340	345		350
Asp Ala Leu Asn Thr Thr Lys Pro Lys Ser Leu Ala Val Lys Lys Ala				
	355	360		365
Lys Trp His Leu Gly Ile Arg Ser Gln Ser Lys Pro Tyr Asp Ile Met				
	370	375		380
Ala Glu Val Tyr Arg Ala Met Lys Gln Leu Asp Phe Glu Trp Lys Val				
	385	390		395
Val Asn Ala Tyr His Leu Arg Val Arg Arg Lys Asn Pro Val Thr Gly				
	405	410		415
Asn Tyr Val Lys Met Ser Leu Gln Leu Tyr Leu Val Asp Asn Arg Ser				
	420	425		430
Tyr Leu Leu Asp Phe Lys Ser Ile Asp Asp Glu Val Val Glu Gln Arg				
	435	440		445

Ser Gly Ser Ser Thr Pro Gln Arg Ser Cys Ser Ala Ala Gly Leu His
450 455 460

Arg Pro Arg Ser Ser Phe Asp Ser Thr Thr Ala Glu Ser His Ser Leu
465 470 475 480

Ser Gly Ser Leu Thr Gly Ser Leu Thr Gly Ser Thr Leu Ser Ser Val
485 490 495

Ser Pro Arg Leu Gly Ser His Thr Met Asp Phe Phe Glu Met Cys Ala
500 505 510

Ser Leu Ile Thr Thr Leu Ala Arg
515 520

<210> 5
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<212> PRT
<213> Homo sapiens

<400> 5

Met Ala Glu Lys Gln Lys His Asp Gly Arg Val Lys Ile Gly His Tyr
1 5 10 15

Val Leu Gly Asp Thr Leu Gly Val Gly Thr Phe Gly Lys Val Lys Ile
20 25 30

Gly Glu His Gln Leu Thr Gly His Lys Val Ala Val Lys Ile Leu Asn
35 40 45

Arg Gln Lys Ile Arg Ser Leu Asp Val Val Gly Lys Ile Lys Arg Glu
50 55 60

Ile Gln Asn Leu Lys Leu Phe Arg His Pro His Ile Ile Lys Leu Tyr
65 70 75 80

Gln Val Ile Ser Thr Pro Thr Asp Phe Phe Met Val Met Glu Tyr Val
85 90 95

Ser Gly Gly Glu Leu Phe Asp Tyr Ile Cys Lys His Gly Arg Val Glu
100 105 110

Glu Met Glu Ala Arg Arg Leu Phe Gln Gln Ile Leu Ser Ala Val Asp
115 120 125

Tyr Cys His Arg His Met Val Val His Arg Asp Leu Lys Pro Glu Asn
130 135 140

Val Leu Leu Asp Ala His Met Asn Ala Lys Ile Ala Asp Phe Gly Leu
145 150 155 160

Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr Ser Cys Gly Ser
165 170 175

Pro Asn Tyr Ala Ala Pro Glu Val Ile Ser Gly Arg Leu Tyr Ala Gly
180 185 190

Pro Glu Val Asp Ile Trp Ser Cys Gly Val Ile Leu Tyr Ala Leu Leu
195 200 205

Cys Gly Thr Leu Pro Phe Asp Asp Glu His Val Pro Thr Leu Phe Lys
210 215 220

Lys Ile Arg Gly Gly Val Phe Tyr Ile Pro Glu Tyr Leu Asn Arg Ser
225 230 235 240

Val Ala Thr Leu Leu Met His Met Leu Gln Val Asp Pro Leu Lys Arg
245 250 255

Ala Thr Ile Lys Asp Ile Arg Glu His Glu Trp Phe Lys Gln Asp Leu
260 265 270

Pro Ser Tyr Leu Phe Pro Glu Asp Pro Ser Tyr Asp Ala Asn Val Ile
275 280 285

Asp Asp Glu Ala Val Lys Glu Val Cys Glu Lys Phe Glu Cys Thr Glu
290 295 300

Ser Glu Val Met Asn Ser Leu Tyr Ser Gly Asp Pro Gln Asp Gln Leu
305 310 315 320

Ala Val Ala Tyr His Leu Ile Ile Asp Asn Arg Arg Ile Met Asn Gln
325 330 335

Ala Ser Glu Phe Tyr Leu Ala Ser Ser Pro Pro Ser Gly Ser Phe Met

340					345					350					
Asp	Asp	Ser	Ala	Met	His	Ile	Pro	Pro	Gly	Leu	Lys	Pro	His	Pro	Glu
		355					360					365			
Arg	Met	Pro	Pro	Leu	Ile	Ala	Asp	Ser	Pro	Lys	Ala	Arg	Cys	Pro	Leu
	370					375					380				
Asp	Ala	Leu	Asn	Thr	Thr	Lys	Pro	Lys	Ser	Leu	Ala	Val	Lys	Lys	Ala
385					390					395					400
Lys	Trp	His	Leu	Gly	Ile	Arg	Ser	Gln	Ser	Lys	Pro	Tyr	Asp	Ile	Met
				405					410					415	
Ala	Glu	Val	Tyr	Arg	Ala	Met	Lys	Gln	Leu	Asp	Phe	Glu	Trp	Lys	Val
			420					425					430		
Val	Asn	Ala	Tyr	His	Leu	Arg	Val	Arg	Arg	Lys	Asn	Pro	Val	Thr	Gly
		435					440					445			
Asn	Tyr	Val	Lys	Met	Ser	Leu	Gln	Leu	Tyr	Leu	Val	Asp	Asn	Arg	Ser
	450					455					460				
Tyr	Leu	Leu	Asp	Phe	Lys	Ser	Ile	Asp	Asp	Glu	Val	Val	Glu	Gln	Arg
465					470					475					480
Ser	Gly	Ser	Ser	Thr	Pro	Gln	Arg	Ser	Cys	Ser	Ala	Ala	Gly	Leu	His
				485					490					495	
Arg	Pro	Arg	Ser	Ser	Phe	Asp	Ser	Thr	Thr	Ala	Glu	Ser	His	Ser	Leu
			500					505					510		
Ser	Gly	Ser	Leu	Thr	Gly	Ser	Leu	Thr	Gly	Ser	Thr	Leu	Ser	Ser	Val
		515					520					525			
Ser	Pro	Arg	Leu	Gly	Ser	His	Thr	Met	Asp	Phe	Phe	Glu	Met	Cys	Ala
	530					535					540				
Ser	Leu	Ile	Thr	Thr	Leu	Ala	Arg								
545					550										

<210> 6
 <211> 433

<212> PRT

<213> Homo sapiens

<400> 6

Met Glu Val Val Asp Pro Gln Gln Leu Gly Met Phe Thr Glu Gly Glu
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Leu Met Ser Val Gly Met Asp Thr Phe Ile His Arg Ile Asp Ser Thr
20 25 30

Glu Val Ile Tyr Gln Pro Arg Arg Lys Arg Ala Lys Leu Ile Gly Lys
35 40 45

Tyr Leu Met Gly Asp Leu Leu Gly Glu Gly Ser Tyr Gly Lys Val Lys
50 55 60

Glu Val Leu Asp Ser Glu Thr Leu Cys Arg Arg Ala Val Lys Ile Leu
65 70 75 80

Lys Lys Lys Lys Leu Arg Arg Ile Pro Asn Gly Glu Ala Asn Val Lys
85 90 95

Lys Glu Ile Gln Leu Leu Arg Arg Leu Arg His Lys Asn Val Ile Gln
100 105 110

Leu Val Asp Val Leu Tyr Asn Glu Glu Lys Gln Lys Met Tyr Met Val
115 120 125

Met Glu Tyr Cys Val Cys Gly Met Gln Glu Met Leu Asp Ser Val Pro
130 135 140

Glu Lys Arg Phe Pro Val Cys Gln Ala His Gly Tyr Phe Cys Gln Leu
145 150 155 160

Ile Asp Gly Leu Glu Tyr Leu His Ser Gln Gly Ile Val His Lys Asp
165 170 175

Ile Lys Pro Gly Asn Leu Leu Leu Thr Thr Gly Gly Thr Leu Lys Ile
180 185 190

Ser Asp Leu Gly Val Ala Glu Ala Leu His Pro Phe Ala Ala Asp Asp
195 200 205

Thr Cys Arg Thr Ser Gln Gly Ser Pro Ala Phe Gln Pro Pro Glu Ile
210 215 220

Ala Asn Gly Leu Asp Thr Phe Ser Gly Phe Lys Val Asp Ile Trp Ser
225 230 235 240

Ala Gly Val Thr Leu Tyr Asn Ile Thr Thr Gly Leu Tyr Pro Phe Glu
245 250 255

Gly Asp Asn Ile Tyr Lys Leu Phe Glu Asn Ile Gly Lys Gly Ser Tyr
260 265 270

Ala Ile Pro Gly Asp Cys Gly Pro Pro Leu Ser Asp Leu Leu Lys Gly
275 280 285

Met Leu Glu Tyr Glu Pro Ala Lys Arg Phe Ser Ile Arg Gln Ile Arg
290 295 300

Gln His Ser Trp Phe Arg Lys Lys His Pro Pro Ala Glu Ala Pro Val
305 310 315 320

Pro Ile Pro Pro Ser Pro Asp Thr Lys Asp Arg Trp Arg Ser Met Thr
325 330 335

Val Val Pro Tyr Leu Glu Asp Leu His Gly Ala Asp Glu Asp Glu Asp
340 345 350

Leu Phe Asp Ile Glu Asp Asp Ile Ile Tyr Thr Gln Asp Phe Thr Val
355 360 365

Pro Gly Gln Val Pro Glu Glu Glu Ala Ser His Asn Gly Gln Arg Arg
370 375 380

Gly Leu Pro Lys Ala Val Cys Met Asn Gly Thr Glu Ala Ala Gln Leu
385 390 395 400

Ser Thr Lys Ser Arg Ala Glu Gly Arg Ala Pro Asn Pro Ala Arg Lys
405 410 415

Ala Cys Ser Ala Ser Ser Lys Ile Arg Arg Leu Ser Ala Cys Lys Gln
420 425 430

Gln

<210> 7
<211> 433
<212> PRT
<213> Homo sapiens

<400> 7

Met Glu Val Val Asp Pro Gln Gln Leu Gly Met Phe Thr Glu Gly Glu
1 5 10 15

Leu Met Ser Val Gly Met Asp Thr Phe Ile His Arg Ile Asp Ser Thr
20 25 30

Glu Val Ile Tyr Gln Pro Arg Arg Lys Arg Ala Lys Leu Ile Gly Lys
35 40 45

Tyr Leu Met Gly Asp Leu Leu Gly Glu Gly Ser Tyr Gly Lys Val Lys
50 55 60

Glu Val Leu Asp Ser Glu Thr Leu Cys Arg Arg Ala Val Lys Ile Leu
65 70 75 80

Lys Lys Lys Lys Leu Arg Arg Ile Pro Asn Gly Glu Ala Asn Val Lys
85 90 95

Lys Glu Ile Gln Leu Leu Arg Arg Leu Arg His Lys Asn Val Ile Gln
100 105 110

Leu Val Asp Val Leu Tyr Asn Glu Glu Lys Gln Lys Met Tyr Met Val
115 120 125

Met Glu Tyr Cys Val Cys Gly Met Gln Glu Met Leu Asp Ser Val Pro
130 135 140

Glu Lys Arg Phe Pro Val Cys Gln Ala His Gly Tyr Phe Cys Gln Leu
145 150 155 160

Ile Asp Gly Leu Glu Tyr Leu His Ser Gln Gly Ile Val His Lys Asp
165 170 175

Ile Lys Pro Gly Asn Leu Leu Leu Thr Thr Gly Gly Thr Leu Lys Ile
180 185 190

Ser Asp Leu Gly Val Ala Glu Ala Leu His Pro Phe Ala Ala Asp Asp
195 200 205

Thr Cys Arg Thr Ser Gln Gly Ser Pro Ala Phe Gln Pro Pro Glu Ile
210 215 220

Ala Asn Gly Leu Asp Thr Phe Ser Gly Phe Lys Val Asp Ile Trp Ser
225 230 235 240

Ala Gly Val Thr Leu Tyr Asn Ile Thr Thr Gly Leu Tyr Pro Phe Glu
245 250 255

Gly Asp Asn Ile Tyr Lys Leu Phe Glu Asn Ile Gly Lys Gly Ser Tyr
260 265 270

Ala Ile Pro Gly Asp Cys Gly Pro Pro Leu Ser Asp Leu Leu Lys Gly
275 280 285

Met Leu Glu Tyr Glu Pro Ala Lys Arg Phe Ser Ile Arg Gln Ile Arg
290 295 300

Gln His Ser Trp Phe Arg Lys Lys His Pro Pro Ala Glu Ala Pro Val
305 310 315 320

Pro Ile Pro Pro Ser Pro Asp Thr Lys Asp Arg Trp Arg Ser Met Thr
325 330 335

Val Val Pro Tyr Leu Glu Asp Leu His Gly Ala Asp Glu Asp Glu Asp
340 345 350

Leu Phe Asp Ile Glu Asp Asp Ile Ile Tyr Thr Gln Asp Phe Thr Val
355 360 365

Pro Gly Gln Val Pro Glu Glu Glu Ala Ser His Asn Gly Gln Arg Arg
370 375 380

Gly Leu Pro Lys Ala Val Cys Met Asn Gly Thr Glu Ala Ala Gln Leu
385 390 395 400

Ser Thr Lys Ser Arg Ala Glu Gly Arg Ala Pro Asn Pro Ala Arg Lys
405 410 415

Ala Cys Ser Ala Ser Ser Lys Ile Arg Arg Leu Ser Ala Cys Lys Gln
420 425 430

Gln

<210> 8
<211> 433
<212> PRT
<213> Homo sapiens

<400> 8

Met Glu Val Val Asp Pro Gln Gln Leu Gly Met Phe Thr Glu Gly Glu
1 5 10 15

Leu Met Ser Val Gly Met Asp Thr Phe Ile His Arg Ile Asp Ser Thr
20 25 30

Glu Val Ile Tyr Gln Pro Arg Arg Lys Arg Ala Lys Leu Ile Gly Lys
35 40 45

Tyr Leu Met Gly Asp Leu Leu Gly Glu Gly Ser Tyr Gly Lys Val Lys
50 55 60

Glu Val Leu Asp Ser Glu Thr Leu Cys Arg Arg Ala Val Lys Ile Leu
65 70 75 80

Lys Lys Lys Lys Leu Arg Arg Ile Pro Asn Gly Glu Ala Asn Val Lys
85 90 95

Lys Glu Ile Gln Leu Leu Arg Arg Leu Arg His Lys Asn Val Ile Gln
100 105 110

Leu Val Asp Val Leu Tyr Asn Glu Glu Lys Gln Lys Met Tyr Met Val
115 120 125

Met Glu Tyr Cys Val Cys Gly Met Gln Glu Met Leu Asp Ser Val Pro
130 135 140

Glu Lys Arg Phe Pro Val Cys Gln Ala His Gly Tyr Phe Cys Gln Leu
145 150 155 160

Ile Asp Gly Leu Glu Tyr Leu His Ser Gln Gly Ile Val His Lys Asp
165 170 175

Ile Lys Pro Gly Asn Leu Leu Leu Thr Thr Gly Gly Thr Leu Lys Ile
180 185 190

Ser Asp Leu Gly Val Ala Glu Ala Leu His Pro Phe Ala Ala Asp Asp
195 200 205

Thr Cys Arg Thr Ser Gln Gly Ser Pro Ala Phe Gln Pro Pro Glu Ile
210 215 220

Ala Asn Gly Leu Asp Thr Phe Ser Gly Phe Lys Val Asp Ile Trp Ser
225 230 235 240

Ala Gly Val Thr Leu Tyr Asn Ile Thr Thr Gly Leu Tyr Pro Phe Glu
245 250 255

Gly Asp Asn Ile Tyr Lys Leu Phe Glu Asn Ile Gly Lys Gly Ser Tyr
260 265 270

Ala Ile Pro Gly Asp Cys Gly Pro Pro Leu Ser Asp Leu Leu Lys Gly
275 280 285

Met Leu Glu Tyr Glu Pro Ala Lys Arg Phe Ser Ile Arg Gln Ile Arg
290 295 300

Gln His Ser Trp Phe Arg Lys Lys His Pro Pro Ala Glu Ala Pro Val
305 310 315 320

Pro Ile Pro Pro Ser Pro Asp Thr Lys Asp Arg Trp Arg Ser Met Thr
325 330 335

Val Val Pro Tyr Leu Glu Asp Leu His Gly Ala Asp Glu Asp Glu Asp
340 345 350

Leu Phe Asp Ile Glu Asp Asp Ile Ile Tyr Thr Gln Asp Phe Thr Val
355 360 365

Pro Gly Gln Val Pro Glu Glu Glu Ala Ser His Asn Gly Gln Arg Arg
370 375 380

Gly Leu Pro Lys Ala Val Cys Met Asn Gly Thr Glu Ala Ala Gln Leu
385 390 395 400

Ser Thr Lys Ser Arg Ala Glu Gly Arg Ala Pro Asn Pro Ala Arg Lys
405 410 415

Ala Cys Ser Ala Ser Ser Lys Ile Arg Arg Leu Ser Ala Cys Lys Gln
420 425 430

Gln

<210> 9
<211> 431
<212> PRT
<213> Homo sapiens

<400> 9

Met Ser Phe Leu Val Ser Lys Pro Glu Arg Ile Arg Arg Trp Val Ser
1 5 10 15

Glu Lys Phe Ile Val Glu Gly Leu Arg Asp Leu Glu Leu Phe Gly Glu
20 25 30

Gln Pro Pro Gly Asp Thr Arg Arg Lys Thr Asn Asp Ala Ser Ser Glu
35 40 45

Ser Ile Ala Ser Phe Ser Lys Gln Glu Val Met Ser Ser Phe Leu Pro
50 55 60

Glu Gly Gly Cys Tyr Glu Leu Leu Thr Val Ile Gly Lys Gly Phe Glu
65 70 75 80

Asp Leu Met Thr Val Asn Leu Ala Arg Tyr Lys Pro Thr Gly Glu Tyr
85 90 95

Val Thr Val Arg Arg Ile Asn Leu Glu Ala Cys Ser Asn Glu Met Val
100 105 110

Thr Phe Leu Gln Gly Glu Leu His Val Ser Lys Leu Phe Asn His Pro
115 120 125

Asn Ile Val Pro Tyr Arg Ala Thr Phe Ile Ala Asp Asn Glu Leu Trp
130 135 140

Val Val Thr Ser Phe Met Ala Tyr Gly Ser Ala Lys Asp Leu Ile Cys

145		150		155		160
Thr His Phe Met	Asp Gly Met Asn Glu Leu Ala Ile Ala Tyr Ile Leu					
	165			170		175
Gln Gly Val Leu Lys Ala Leu Asp Tyr Ile His His Met Gly Tyr Val						
	180			185		190
His Arg Ser Val Lys Ala Ser His Ile Leu Ile Ser Val Asp Gly Lys						
	195			200		205
Val Tyr Leu Ser Gly Leu Arg Ser Asn Leu Ser Met Ile Ser His Gly						
	210			215		220
Gln Arg Gln Arg Val Val His Asp Phe Pro Lys Tyr Ser Val Lys Val						
	225			230		235
Leu Pro Trp Leu Ser Pro Glu Val Leu Gln Gln Asn Leu Gln Gly Tyr						
	245			250		255
Asp Ala Lys Ser Asp Ile Tyr Ser Val Gly Ile Thr Ala Cys Glu Leu						
	260			265		270
Ala Asn Gly His Val Pro Phe Lys Asp Met Pro Ala Thr Gln Met Leu						
	275			280		285
Leu Glu Lys Leu Asn Gly Thr Val Pro Cys Leu Leu Asp Thr Ser Thr						
	290			295		300
Ile Pro Ala Glu Glu Leu Thr Met Ser Pro Ser Arg Ser Val Ala Asn						
	305			310		315
Ser Gly Leu Ser Asp Ser Leu Thr Thr Ser Thr Pro Arg Pro Ser Asn						
	325			330		335
Gly Asp Trp Pro Ser His Pro Tyr His Arg Thr Phe Ser Pro His Phe						
	340			345		350
His His Phe Val Glu Gln Cys Leu Gln Arg Asn Pro Asp Ala Arg Pro						
	355			360		365
Ser Ala Ser Thr Leu Leu Asn His Ser Phe Phe Lys Gln Ile Lys Arg						
	370			375		380

Arg Ala Ser Lys Ala Leu Pro Glu Leu Leu Arg Pro Val Thr Pro Ile
385 390 395 400

Thr Asn Phe Glu Gly Ser Gln Ser Gln Asp His Ser Gly Ile Phe Gly
405 410 415

Leu Val Thr Asn Leu Glu Glu Leu Glu Val Asp Asp Trp Glu Phe
420 425 430

<210> 10
<211> 418
<212> PRT
<213> Homo sapiens

<400> 10

Met Ser Leu Leu Asp Cys Phe Cys Thr Ser Arg Thr Gln Val Glu Ser
1 5 10 15

Leu Arg Pro Glu Lys Gln Ser Glu Thr Ser Ile His Gln Tyr Leu Val
20 25 30

Asp Glu Pro Thr Leu Ser Trp Ser Arg Pro Ser Thr Arg Ala Ser Glu
35 40 45

Val Leu Cys Ser Thr Asn Val Ser His Tyr Glu Leu Gln Val Glu Ile
50 55 60

Gly Arg Gly Phe Asp Asn Leu Thr Ser Val His Leu Ala Arg His Thr
65 70 75 80

Pro Thr Gly Thr Leu Val Thr Ile Lys Ile Thr Asn Leu Glu Asn Cys
85 90 95

Asn Glu Glu Arg Leu Lys Ala Leu Gln Lys Ala Val Ile Leu Ser His
100 105 110

Phe Phe Arg His Pro Asn Ile Thr Thr Tyr Trp Thr Val Phe Thr Val
115 120 125

Gly Ser Trp Leu Trp Val Ile Ser Pro Phe Met Ala Tyr Gly Ser Ala
130 135 140

Ser Gln Leu Leu Arg Thr Tyr Phe Pro Glu Gly Met Ser Glu Thr Leu
145 150 155 160

Ile Arg Asn Ile Leu Phe Gly Ala Val Arg Gly Leu Asn Tyr Leu His
165 170 175

Gln Asn Gly Cys Ile His Arg Ser Ile Lys Ala Ser His Ile Leu Ile
180 185 190

Ser Gly Asp Gly Leu Val Thr Leu Ser Gly Leu Ser His Leu His Ser
195 200 205

Leu Val Lys His Gly Gln Arg His Arg Ala Val Tyr Asp Phe Pro Gln
210 215 220

Phe Ser Thr Ser Val Gln Pro Trp Leu Ser Pro Glu Leu Leu Arg Gln
225 230 235 240

Asp Leu His Gly Tyr Asn Val Lys Ser Asp Ile Tyr Ser Val Gly Ile
245 250 255

Thr Ala Cys Glu Leu Ala Ser Gly Gln Val Pro Phe Gln Asp Met His
260 265 270

Arg Thr Gln Met Leu Leu Gln Lys Leu Lys Gly Pro Pro Tyr Ser Pro
275 280 285

Leu Asp Ile Ser Ile Phe Pro Gln Ser Glu Ser Arg Met Lys Asn Ser
290 295 300

Gln Ser Gly Val Asp Ser Gly Ile Gly Glu Ser Val Leu Val Ser Ser
305 310 315 320

Gly Thr His Thr Val Asn Ser Asp Arg Leu His Thr Pro Ser Ser Lys
325 330 335

Thr Phe Ser Pro Ala Phe Phe Ser Leu Val Gln Leu Cys Leu Gln Gln
340 345 350

Asp Pro Glu Lys Arg Pro Ser Ala Ser Ser Leu Leu Ser His Val Phe
355 360 365

Phe Lys Gln Met Lys Glu Glu Ser Gln Asp Ser Ile Leu Ser Leu Leu

370

375

380

Pro Pro Ala Tyr Asn Lys Pro Ser Ile Ser Leu Pro Pro Val Leu Pro
 385 390 395 400

Trp Thr Glu Pro Glu Cys Asp Phe Pro Asp Glu Lys Asp Ser Tyr Trp
 405 410 415

Glu Phe

<210> 11
 <211> 341
 <212> PRT
 <213> Homo sapiens

<400> 11

Met Pro Phe Pro Phe Gly Lys Ser His Lys Ser Pro Ala Asp Ile Val
 1 5 10 15

Lys Asn Leu Lys Glu Ser Met Ala Val Leu Glu Lys Gln Asp Ile Ser
 20 25 30

Asp Lys Lys Ala Glu Lys Ala Thr Glu Glu Val Ser Lys Asn Leu Val
 35 40 45

Ala Met Lys Glu Ile Leu Tyr Gly Thr Asn Glu Lys Glu Pro Gln Thr
 50 55 60

Glu Ala Val Ala Gln Leu Ala Gln Glu Leu Tyr Asn Ser Gly Leu Leu
 65 70 75 80

Ser Thr Leu Val Ala Asp Leu Gln Leu Ile Asp Phe Glu Gly Lys Lys
 85 90 95

Asp Val Ala Gln Ile Phe Asn Asn Ile Leu Arg Arg Gln Ile Gly Thr
 100 105 110

Arg Thr Pro Thr Val Glu Tyr Ile Cys Thr Gln Gln Asn Ile Leu Phe
 115 120 125

Met Leu Leu Lys Gly Tyr Glu Ser Pro Glu Ile Ala Leu Asn Cys Gly
 130 135 140

Ile Met Leu Arg Glu Cys Ile Arg His Glu Pro Leu Ala Lys Ile Ile
145 150 155 160

Leu Trp Ser Glu Gln Phe Tyr Asp Phe Phe Arg Tyr Val Glu Met Ser
165 170 175

Thr Phe Asp Ile Ala Ser Asp Ala Phe Ala Thr Phe Lys Asp Leu Leu
180 185 190

Thr Arg His Lys Leu Leu Ser Ala Glu Phe Leu Glu Gln His Tyr Asp
195 200 205

Arg Phe Phe Ser Glu Tyr Glu Lys Leu Leu His Ser Glu Asn Tyr Val
210 215 220

Thr Lys Arg Gln Ser Leu Lys Leu Leu Gly Glu Leu Leu Leu Asp Arg
225 230 235 240

His Asn Phe Thr Ile Met Thr Lys Tyr Ile Ser Lys Pro Glu Asn Leu
245 250 255

Lys Leu Met Met Asn Leu Leu Arg Asp Lys Ser Arg Asn Ile Gln Phe
260 265 270

Glu Ala Phe His Val Phe Lys Val Phe Val Ala Asn Pro Asn Lys Thr
275 280 285

Gln Pro Ile Leu Asp Ile Leu Leu Lys Asn Gln Ala Lys Leu Ile Glu
290 295 300

Phe Leu Ser Lys Phe Gln Asn Asp Arg Thr Glu Asp Glu Gln Phe Asn
305 310 315 320

Asp Glu Lys Thr Tyr Leu Val Lys Gln Ile Arg Asp Leu Lys Arg Pro
325 330 335

Ala Gln Gln Glu Ala
340

<210> 12
<211> 337
<212> PRT
<213> Homo sapiens

<400> 12

Met Lys Lys Met Pro Leu Phe Ser Lys Ser His Lys Asn Pro Ala Glu
1 5 10 15

Ile Val Lys Ile Leu Lys Asp Asn Leu Ala Ile Leu Glu Lys Gln Asp
20 25 30

Lys Lys Thr Asp Lys Ala Ser Glu Glu Val Ser Lys Ser Leu Gln Ala
35 40 45

Met Lys Glu Ile Leu Cys Gly Thr Asn Glu Lys Glu Pro Pro Thr Glu
50 55 60

Ala Val Ala Gln Leu Ala Gln Glu Leu Tyr Ser Ser Gly Leu Leu Val
65 70 75 80

Thr Leu Ile Ala Asp Leu Gln Leu Ile Asp Phe Glu Gly Lys Lys Asp
85 90 95

Val Thr Gln Ile Phe Asn Asn Ile Leu Arg Arg Gln Ile Gly Thr Arg
100 105 110

Ser Pro Thr Val Glu Tyr Ile Ser Ala His Pro His Ile Leu Phe Met
115 120 125

Leu Leu Lys Gly Tyr Glu Ala Pro Gln Ile Ala Leu Arg Cys Gly Ile
130 135 140

Met Leu Arg Glu Cys Ile Arg His Glu Pro Leu Ala Lys Ile Ile Leu
145 150 155 160

Phe Ser Asn Gln Phe Arg Asp Phe Phe Lys Tyr Val Glu Leu Ser Thr
165 170 175

Phe Asp Ile Ala Ser Asp Ala Phe Ala Thr Phe Lys Asp Leu Leu Thr
180 185 190

Arg His Lys Val Leu Val Ala Asp Phe Leu Glu Gln Asn Tyr Asp Thr
195 200 205

Ile Phe Glu Asp Tyr Glu Lys Leu Leu Gln Ser Glu Asn Tyr Val Thr
210 215 220

Lys Arg Gln Ser Leu Lys Leu Leu Gly Glu Leu Ile Leu Asp Arg His
225 230 235 240

Asn Phe Ala Ile Met Thr Lys Tyr Ile Ser Lys Pro Glu Asn Leu Lys
245 250 255

Leu Met Met Asn Leu Leu Arg Asp Lys Ser Pro Asn Ile Gln Phe Glu
260 265 270

Ala Phe His Val Phe Lys Val Phe Val Ala Ser Pro His Lys Thr Gln
275 280 285

Pro Ile Val Glu Ile Leu Leu Lys Asn Gln Pro Lys Leu Ile Glu Phe
290 295 300

Leu Ser Ser Phe Gln Lys Glu Arg Thr Asp Asp Glu Gln Phe Ala Asp
305 310 315 320

Glu Lys Asn Tyr Leu Ile Lys Gln Ile Arg Asp Leu Lys Lys Thr Ala
325 330 335

Pro

<210> 13
<211> 338
<212> PRT
<213> Caenorhabditis elegans

<400> 13

Met Leu Lys Pro Leu Phe Gly Lys Ala Asp Lys Thr Pro Ala Asp Val
1 5 10 15

Val Lys Asn Leu Arg Asp Ala Leu Leu Val Ile Asp Arg His Gly Thr
20 25 30

Asn Thr Ser Glu Arg Lys Val Glu Lys Ala Ile Glu Glu Thr Ala Lys
35 40 45

Met Leu Ala Leu Ala Lys Thr Phe Ile Tyr Gly Ser Asp Ala Asn Glu
50 55 60

Pro Asn Asn Glu Gln Val Thr Gln Leu Ala Gln Glu Val Tyr Asn Ala
65 70 75 80

Asn Val Leu Pro Met Leu Ile Lys His Leu His Lys Phe Glu Phe Glu
85 90 95

Cys Lys Lys Asp Val Ala Ser Val Phe Asn Asn Leu Leu Arg Arg Gln
100 105 110

Ile Gly Thr Arg Ser Pro Thr Val Glu Tyr Leu Ala Ala Arg Pro Glu
115 120 125

Ile Leu Ile Thr Leu Leu Leu Gly Tyr Glu Gln Pro Asp Ile Ala Leu
130 135 140

Thr Cys Gly Ser Met Leu Arg Glu Ala Val Arg His Glu His Leu Ala
145 150 155 160

Arg Ile Val Leu Tyr Ser Glu Tyr Phe Gln Arg Phe Phe Val Phe Val
165 170 175

Gln Ser Asp Val Phe Asp Ile Ala Thr Asp Ala Phe Ser Thr Phe Lys
180 185 190

Asp Leu Met Thr Lys His Lys Asn Met Cys Ala Glu Tyr Leu Asp Asn
195 200 205

Asn Tyr Asp Arg Phe Phe Gly Gln Tyr Ser Ala Leu Thr Asn Ser Glu
210 215 220

Asn Tyr Val Thr Arg Arg Gln Ser Leu Lys Leu Leu Gly Glu Leu Leu
225 230 235 240

Leu Asp Arg His Asn Phe Ser Thr Met Asn Lys Tyr Ile Thr Ser Pro
245 250 255

Glu Asn Leu Lys Thr Val Met Glu Leu Leu Arg Asp Lys Arg Arg Asn
260 265 270

Ile Gln Tyr Glu Ala Phe His Val Phe Lys Ile Phe Val Ala Asn Pro
275 280 285

Asn Lys Pro Arg Pro Ile Thr Asp Ile Leu Thr Arg Asn Arg Asp Lys

290

295

300

Leu Val Glu Phe Leu Thr Ala Phe His Asn Asp Arg Thr Asn Asp Glu
 305 310 315 320

Gln Phe Asn Asp Glu Lys Ala Tyr Leu Ile Lys Gln Ile Gln Glu Leu
 325 330 335

Arg Val

<210> 14
 <211> 636
 <212> PRT
 <213> Caenorhabditis elegans

<400> 14

Met Asp Ser Thr Thr Ser Leu Pro Asn Asn Val Leu Leu Lys Lys Ala
 1 5 10 15

Arg Pro Ser Lys Ile Phe Ala Val Thr Ser Ala Asn Ala Leu Asn Val
 20 25 30

Lys Thr Glu Pro Val Ile Phe Val Lys Ser Asp Asp Leu Asn Gln Ala
 35 40 45

Asn Thr Pro Leu Thr Gly Ser Lys Phe Gly Thr His Leu Ala Cys Ile
 50 55 60

Arg Thr Ser Cys Leu His Arg Thr Val Asn Ala Ser Asn Tyr Ser Thr
 65 70 75 80

Met Ser Asp Gly Gly Leu Tyr Thr Ser Asp Glu Pro Cys Ser Ser Ala
 85 90 95

Gln Ala Glu Phe Arg Leu Ala Ala His Trp Glu Ser Thr Phe Thr Arg
 100 105 110

Thr Arg Glu Ile His Cys Asp Thr Gly Tyr Ser Ser Gln Ser Pro Pro
 115 120 125

Glu Thr Thr Val Phe Ile Gln Lys Ser Arg Phe Pro Val Ala Glu Lys
 130 135 140

Pro Gly Thr Pro Glu Leu Lys Ser Phe Glu Ser Lys Lys Leu Val Gln
145 150 155 160

Lys Lys Ser Gly Asn Ala Ser Thr Pro Thr Arg Lys Leu Ala Ser Glu
165 170 175

Glu Lys Lys Ala Lys Asn Thr Ser Met Gly Gln Thr Pro Ser Lys Leu
180 185 190

Lys Ser Pro Lys Ala Leu Lys Met Val Lys Lys Glu Asn Glu Pro Ala
195 200 205

Ile Pro Pro Asn His Phe Glu Gly Lys Val Tyr Gly Tyr Leu Val Asp
210 215 220

Asp Met Ser Ala Ile Gly Ile Gln Pro Ile Leu Asp Lys Tyr Asn Glu
225 230 235 240

Asp Pro Glu Lys Phe Phe Lys Arg Phe Asp Ser Lys Pro Trp Phe Arg
245 250 255

Arg Lys Val Met Pro Leu Leu Phe Gly Lys Ser His Lys Ser Pro Ala
260 265 270

Asp Val Val Lys Thr Leu Arg Glu Val Leu Thr Ile Leu Asp Lys Leu
275 280 285

Pro Pro Pro Lys Leu Asp Lys Asp Gly Asn Ile Gln Ser Asp Lys Lys
290 295 300

Tyr Asp Lys Ala Leu Asp Glu Val Ser Lys Asn Val Ala Met Ile Lys
305 310 315 320

Ser Phe Ile Tyr Gly Asn Asp Ser Ala Glu Pro Ser Ser Glu His Val
325 330 335

Val Gln Val Ala Gln Leu Ala Gln Glu Val Tyr Asn Ala Asn Ile Leu
340 345 350

Pro Met Leu Ile Lys Met Leu Pro Lys Phe Glu Phe Glu Cys Lys Lys
355 360 365

Asp Val Gly Gln Ile Phe Asn Asn Leu Leu Arg Arg Gln Ile Gly Thr
370 375 380

Arg Ser Pro Thr Val Glu Tyr Leu Gly Ala Arg Pro Glu Ile Leu Ile
385 390 395 400

Gln Leu Val Gln Gly Tyr Ser Val Pro Asp Ile Ala Leu Thr Cys Gly
405 410 415

Leu Met Leu Arg Glu Ser Ile Arg His Asp His Leu Ala Lys Ile Ile
420 425 430

Leu Tyr Ser Asp Val Phe Tyr Thr Phe Phe Leu Tyr Val Gln Ser Glu
435 440 445

Val Phe Asp Ile Ser Ser Asp Ala Phe Ser Thr Phe Lys Glu Leu Thr
450 455 460

Thr Arg His Lys Ala Ile Ile Ala Glu Phe Leu Asp Ser Asn Tyr Asp
465 470 475 480

Thr Phe Phe Ala Gln Tyr Gln Asn Leu Leu Asn Ser Lys Asn Tyr Val
485 490 495

Thr Arg Arg Gln Ser Leu Lys Leu Leu Gly Glu Leu Leu Leu Asp Arg
500 505 510

His Asn Phe Asn Thr Met Thr Lys Tyr Ile Ser Asn Pro Asp Asn Leu
515 520 525

Arg Leu Met Met Glu Leu Leu Arg Asp Lys Ser Arg Asn Ile Gln Tyr
530 535 540

Glu Ala Phe His Val Phe Lys Val Phe Val Ala Asn Pro Asn Lys Pro
545 550 555 560

Lys Pro Ile Ser Asp Ile Leu Asn Arg Asn Arg Glu Lys Leu Val Glu
565 570 575

Phe Leu Ser Glu Phe His Asn Asp Arg Thr Asp Asp Glu Gln Phe Asn
580 585 590

Asp Glu Lys Ala Tyr Leu Ile Lys Gln Ile Gln Glu Met Lys Ser Ser

595

600

605

Pro Lys Glu Ala Lys Lys Pro Lys Ser Lys Glu Asp Glu Asn Gln Glu
 610 615 620

Pro Ala Gly Pro Ser Glu Gly Pro Ser Thr Ser Gln
 625 630 635

<210> 15

<211> 339

<212> PRT

<213> *Drosophila melanogaster*

<400> 15

Met Pro Leu Phe Gly Lys Ser Gln Lys Ser Pro Val Glu Leu Val Lys
 1 5 10 15

Ser Leu Lys Glu Ala Ile Asn Ala Leu Glu Ala Gly Asp Arg Lys Val
 20 25 30

Glu Lys Ala Gln Glu Asp Val Ser Lys Asn Leu Val Ser Ile Lys Asn
 35 40 45

Met Leu Tyr Gly Ser Ser Asp Ala Glu Pro Pro Ala Asp Tyr Val Val
 50 55 60

Ala Gln Leu Ser Gln Glu Leu Tyr Asn Ser Asn Leu Leu Leu Leu Leu
 65 70 75 80

Ile Gln Asn Leu His Arg Ile Asp Phe Glu Gly Lys Lys His Val Ala
 85 90 95

Leu Ile Phe Asn Asn Val Leu Arg Arg Gln Ile Gly Thr Arg Ser Pro
 100 105 110

Thr Val Glu Tyr Ile Cys Thr Lys Pro Glu Ile Leu Phe Thr Leu Met
 115 120 125

Ala Gly Tyr Glu Asp Ala His Pro Glu Ile Ala Leu Asn Ser Gly Thr
 130 135 140

Met Leu Arg Glu Cys Ala Arg Tyr Glu Ala Leu Ala Lys Ile Met Leu
 145 150 155 160

His Ser Asp Glu Phe Phe Lys Phe Phe Arg Tyr Val Glu Val Ser Thr
165 170 175

Phe Asp Ile Ala Ser Asp Ala Phe Ser Thr Phe Lys Glu Leu Leu Thr
180 185 190

Arg His Lys Leu Leu Cys Ala Glu Phe Leu Asp Ala Asn Tyr Asp Lys
195 200 205

Phe Phe Ser Gln His Tyr Gln Arg Leu Leu Asn Ser Glu Asn Tyr Val
210 215 220

Thr Arg Arg Gln Ser Leu Lys Leu Leu Gly Glu Leu Leu Leu Asp Arg
225 230 235 240

His Asn Phe Thr Val Met Thr Arg Tyr Ile Ser Glu Pro Glu Asn Leu
245 250 255

Lys Leu Met Met Asn Met Leu Lys Glu Lys Ser Arg Asn Ile Gln Phe
260 265 270

Glu Ala Phe His Val Phe Lys Val Phe Val Ala Asn Pro Asn Lys Pro
275 280 285

Lys Pro Ile Leu Asp Ile Leu Leu Arg Asn Gln Thr Lys Leu Val Asp
290 295 300

Phe Leu Thr Asn Phe His Thr Asp Arg Ser Glu Asp Glu Gln Phe Asn
305 310 315 320

Asp Glu Lys Ala Tyr Leu Ile Lys Gln Ile Lys Glu Leu Lys Pro Leu
325 330 335

Pro Glu Ala

<210> 16

<211> 20

<212> PRT

<213> Artificial

<220>

<223> LKB1 substrate

<400> 16

Leu Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly
1 5 10 15

Ser Pro Leu Tyr
20

<210> 17
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 17

Phe Gly Asn Phe Tyr Lys Ser Gly Glu Pro Leu Ser Thr Trp Cys Gly
1 5 10 15

Ser Pro Pro Tyr
20

<210> 18
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 18

Leu Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr Ser Cys Gly
1 5 10 15

Ser Pro Asn Tyr
20

<210> 19
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 19

Met Ala Ser Leu Gln Val Gly Asp Ser Leu Leu Glu Thr Ser Cys Gly

1 5 10 15

Ser Pro His Tyr
20

<210> 20
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 20

Phe Ser Asn Glu Phe Thr Val Gly Gly Lys Leu Asp Thr Phe Cys Gly
1 5 10 15

Ser Pro Pro Tyr
20

<210> 21
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 21

Ala Lys Pro Lys Gly Asn Lys Asp Tyr His Leu Gln Thr Cys Cys Gly
1 5 10 15

Ser Leu Ala Tyr
20

<210> 22
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 22

Leu Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly
1 5 10 15

Ser Pro Leu Tyr
20

<210> 23
<211> 23
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 23

Leu Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly
1 5 10 15

Ser Pro Leu Tyr Arg Arg Arg
20

<210> 24
<211> 19
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 24

Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly Ser
1 5 10 15

Pro Leu Tyr

<210> 25
<211> 22
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 25

Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly Ser
1 5 10 15

Pro Leu Tyr Arg Arg Arg
20

<210> 26
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 26

Leu Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly
1 5 10 15

Ser Pro Leu Tyr
20

<210> 27
<211> 23
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 27

Leu Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly
1 5 10 15

Ser Pro Leu Tyr Arg Arg Arg
20

<210> 28
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 28

Phe Gly Asn Phe Tyr Lys Ser Gly Glu Pro Leu Ser Thr Trp Cys Gly
1 5 10 15

Ser Pro Pro Tyr
20

<210> 29
<211> 23

<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 29

Phe Gly Asn Phe Tyr Lys Ser Gly Glu Pro Leu Ser Thr Trp Cys Gly
1 5 10 15

Ser Pro Pro Tyr Arg Arg Arg
20

<210> 30
<211> 20
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 30

Leu Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr Ser Cys Gly
1 5 10 15

Ser Pro Asn Tyr
20

<210> 31
<211> 23
<212> PRT
<213> Artificial

<220>
<223> LKB1 substrate

<400> 31

Leu Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr Ser Cys Gly
1 5 10 15

Ser Pro Asn Tyr Arg Arg Arg
20

<210> 32
<211> 20
<212> PRT
<213> Artificial

<220>

<223> LKB1 substrate

<400> 32

Met Ala Ser Leu Gln Val Gly Asp Ser Leu Leu Glu Thr Ser Cys Gly
1 5 10 15

Ser Pro His Tyr
20

<210> 33

<211> 23

<212> PRT

<213> Artificial

<220>

<223> LKB1 substrate

<400> 33

Met Ala Ser Leu Gln Val Gly Asp Ser Leu Leu Glu Thr Ser Cys Gly
1 5 10 15

Ser Pro His Tyr Arg Arg Arg
20

<210> 34

<211> 20

<212> PRT

<213> Artificial

<220>

<223> LKB1 substrate

<400> 34

Phe Ser Asn Glu Phe Thr Val Gly Gly Lys Leu Asp Thr Phe Cys Gly
1 5 10 15

Ser Pro Pro Tyr
20

<210> 35

<211> 23

<212> PRT

<213> Artificial

<220>

<223> LKB1 substrate

<400> 35

Phe Ser Asn Glu Phe Thr Val Gly Gly Lys Leu Asp Thr Phe Cys Gly
1 5 10 15

Ser Pro Pro Tyr Arg Arg Arg
20

<210> 36

<211> 20

<212> PRT

<213> Artificial

<220>

<223> LKB1 substrate

<400> 36

Ala Lys Pro Lys Gly Asn Lys Asp Tyr His Leu Gln Thr Cys Cys Gly
1 5 10 15

Ser Leu Ala Tyr
20

<210> 37

<211> 23

<212> PRT

<213> Artificial

<220>

<223> LKB1 substrate

<400> 37

Ala Lys Pro Lys Gly Asn Lys Asp Tyr His Leu Gln Thr Cys Cys Gly
1 5 10 15

Ser Leu Ala Tyr Arg Arg Arg
20

<210> 38

<211> 19

<212> PRT

<213> Homo sapiens

<400> 38

Met Val Ala Gly Leu Thr Leu Gly Lys Gly Pro Glu Ser Pro Asp Gly
1 5 10 15

Asp Val Ser

<210> 39
<211> 20
<212> PRT
<213> Homo sapiens

<400> 39

Leu Ser Trp Gly Ala Gly Leu Lys Gly Gln Lys Val Ala Thr Ser Tyr
1 5 10 15

Glu Ser Ser Leu
20

<210> 40
<211> 21
<212> PRT
<213> Homo sapiens

<400> 40

Met Glu Gly Ala Ala Ala Pro Val Ala Gly Asp Arg Pro Asp Leu Gly
1 5 10 15

Leu Gly Ala Pro Gly
20

<210> 41
<211> 21
<212> PRT
<213> Homo sapiens

<400> 41

Thr Asp Cys Gln Glu Val Thr Ala Thr Tyr Arg Gln Ala Leu Arg Val
1 5 10 15

Cys Ser Lys Leu Thr
20

<210> 42
<211> 21
<212> PRT
<213> Homo sapiens

<400> 42

Met Val Met Ala Asp Gly Pro Arg His Leu Gln Arg Gly Pro Val Arg

1 5 10 15

Val Gly Phe Tyr Asp
20

<210> 43
<211> 20
<212> PRT
<213> Homo sapiens

<400> 43

Met Val Ile Met Ser Glu Phe Ser Ala Asp Pro Ala Gly Gln Gly Gln
1 5 10 15

Gly Gln Gln Lys
20

<210> 44
<211> 20
<212> PRT
<213> Homo sapiens

<400> 44

Gly Asp Cys Glu Met Glu Asp Leu Met Pro Cys Ser Leu Gly Thr Phe
1 5 10 15

Val Leu Val Gln
20

<210> 45
<211> 21
<212> PRT
<213> Homo sapiens

<400> 45

Thr Asp Ile Leu Leu Ser Tyr Lys His Pro Glu Val Ser Phe Ser Met
1 5 10 15

Glu Gln Ala Gly Val
20

<210> 46
<211> 20
<212> PRT
<213> Homo sapiens

<400> 46

Ser Gly Thr Ser Ile Ala Phe Lys Asn Ile Ala Ser Lys Ile Ala Asn
1 5 10 15

Glu Leu Lys Leu
20

<210> 47

<211> 20

<212> PRT

<213> Homo sapiens

<400> 47

Met Ser Ser Arg Thr Val Leu Ala Pro Gly Asn Asp Arg Asn Ser Asp
1 5 10 15

Thr His Gly Thr
20

<210> 48

<211> 20

<212> PRT

<213> Homo sapiens

<400> 48

Met Lys Asp Tyr Asp Glu Leu Leu Lys Tyr Tyr Glu Leu His Glu Thr
1 5 10 15

Ile Gly Thr Gly
20

<210> 49

<211> 16

<212> PRT

<213> Homo sapiens

<400> 49

Cys Thr Ser Pro Pro Asp Ser Phe Leu Asp Asp His His Leu Thr Arg
1 5 10 15

<210> 50

<211> 14

<212> PRT

<213> Homo sapiens

<400> 50

Cys Asp Pro Met Lys Arg Ala Thr Ile Lys Asp Ile Arg Glu
1 5 10

<210> 51
<211> 12
<212> PRT
<213> Artificial

<220>
<223> C-terminal 12 residues STRAD alpha

<400> 51

Asn Leu Glu Glu Leu Glu Val Asp Asp Trp Glu Phe
1 5 10

<210> 52
<211> 12
<212> PRT
<213> Artificial

<220>
<223> C-terminal 12 residues STRAD alpha, last residue mutated to Ala

<400> 52

Asn Leu Glu Glu Leu Glu Val Asp Asp Trp Glu Ala
1 5 10

<210> 53
<211> 12
<212> PRT
<213> Artificial

<220>
<223> C-terminal 12 residues STRAD alpha, third last residue mutated to Ala

<400> 53

Asn Leu Glu Glu Leu Glu Val Asp Asp Ala Glu Phe
1 5 10

<210> 54
<211> 12
<212> PRT
<213> Artificial

<220>
<223> C-terminal 12 residues STRAD alpha, second last residue mutated to Ala

<400> 54

Asn Leu Glu Glu Leu Glu Val Asp Asp Trp Ala Phe
1 5 10

<210> 55

<211> 6

<212> PRT

<213> Artificial

<220>

<223> C-terminal 6 residues STRAD alpha

<400> 55

Val Asp Asp Trp Glu Phe
1 5

<210> 56

<211> 547

<212> PRT

<213> Homo sapiens

<400> 56

Met Ala Glu Pro Ser Gly Ser Pro Val His Val Gln Leu Pro Gln Gln
1 5 10 15

Ala Ala Pro Val Thr Ala Ala Ala Ala Ala Ala Pro Ala Ala Ala Thr
20 25 30

Ala Ala Pro Ala Pro Ala Ala Pro Ala Ala Pro Ala Pro Ala Pro Ala
35 40 45

Pro Ala Pro Ala Ala Gln Ala Val Gly Trp Pro Ile Cys Arg Asp Ala
50 55 60

Tyr Glu Leu Gln Glu Val Ile Gly Ser Gly Ala Thr Ala Val Val Gln
65 70 75 80

Ala Ala Leu Cys Lys Pro Arg Gln Glu Arg Val Ala Ile Lys Arg Ile
85 90 95

Asn Leu Glu Lys Cys Gln Thr Ser Met Asp Glu Leu Leu Lys Glu Ile
100 105 110

Gln Ala Met Ser Gln Cys Ser His Pro Asn Val Val Thr Tyr Tyr Thr
115 120 125

Ser Phe Val Val Lys Asp Glu Leu Trp Leu Val Met Lys Leu Leu Ser
130 135 140

Gly Gly Ser Met Leu Asp Ile Ile Lys Tyr Ile Val Asn Arg Gly Glu
145 150 155 160

His Lys Asn Gly Val Leu Glu Glu Ala Ile Ile Ala Thr Ile Leu Lys
165 170 175

Glu Val Leu Glu Gly Leu Asp Tyr Leu His Arg Asn Gly Gln Ile His
180 185 190

Arg Asp Leu Lys Ala Gly Asn Ile Leu Leu Gly Glu Asp Gly Ser Val
195 200 205

Gln Ile Ala Asp Phe Gly Val Ser Ala Phe Leu Ala Thr Gly Gly Asp
210 215 220

Val Thr Arg Asn Lys Val Arg Lys Thr Phe Val Gly Thr Pro Cys Trp
225 230 235 240

Met Ala Pro Glu Val Met Glu Gln Val Arg Gly Tyr Asp Phe Lys Ala
245 250 255

Asp Met Trp Ser Phe Gly Ile Thr Ala Ile Glu Leu Ala Thr Gly Ala
260 265 270

Ala Pro Tyr His Lys Tyr Pro Pro Met Lys Val Leu Met Leu Thr Leu
275 280 285

Gln Asn Asp Pro Pro Thr Leu Glu Thr Gly Val Glu Asp Lys Glu Met
290 295 300

Met Lys Lys Tyr Gly Lys Ser Phe Arg Lys Leu Leu Ser Leu Cys Leu
305 310 315 320

Gln Lys Asp Pro Ser Lys Arg Pro Thr Ala Ala Glu Leu Leu Lys Cys
325 330 335

Lys Phe Phe Gln Lys Ala Lys Asn Arg Glu Tyr Leu Ile Glu Lys Leu
340 345 350

Leu Thr Arg Thr Pro Asp Ile Ala Gln Arg Ala Lys Lys Val Arg Arg
355 360 365

Val Pro Gly Ser Ser Gly His Leu His Lys Thr Glu Asp Gly Asp Trp
370 375 380

Glu Trp Ser Asp Asp Glu Met Asp Glu Lys Ser Glu Glu Gly Lys Ala
385 390 395 400

Ala Phe Ser Gln Glu Lys Ser Arg Arg Val Lys Glu Glu Asn Pro Glu
405 410 415

Ile Ala Val Ser Ala Ser Thr Ile Pro Glu Gln Ile Gln Ser Leu Ser
420 425 430

Val His Asp Ser Gln Gly Pro Pro Asn Ala Asn Glu Asp Tyr Arg Glu
435 440 445

Ala Ser Ser Cys Ala Val Asn Leu Val Leu Arg Leu Arg Asn Ser Arg
450 455 460

Lys Glu Leu Asn Asp Ile Arg Phe Glu Phe Thr Pro Gly Arg Asp Thr
465 470 475 480

Ala Asp Gly Val Ser Gln Glu Leu Phe Ser Ala Gly Leu Val Asp Gly
485 490 495

His Asp Val Val Ile Val Ala Ala Asn Leu Gln Lys Ile Val Asp Asp
500 505 510

Pro Lys Ala Leu Lys Thr Leu Thr Phe Lys Leu Ala Ser Gly Cys Asp
515 520 525

Gly Ser Glu Ile Pro Asp Glu Val Lys Leu Ile Gly Phe Ala Gln Leu
530 535 540

Ser Val Ser
545

<210> 57
<211> 527
<212> PRT
<213> Homo sapiens

<400> 57

Met Ser Glu Asp Ser Ser Ala Leu Pro Trp Ser Ile Asn Arg Asp Asp
1 5 10 15

Tyr Glu Leu Gln Glu Val Ile Gly Ser Gly Ala Thr Ala Val Val Gln
20 25 30

Ala Ala Tyr Cys Ala Pro Lys Lys Glu Lys Val Ala Ile Lys Arg Ile
35 40 45

Asn Leu Glu Lys Cys Gln Thr Ser Met Asp Glu Leu Leu Lys Glu Ile
50 55 60

Gln Ala Met Ser Gln Cys His His Pro Asn Ile Val Ser Tyr Tyr Thr
65 70 75 80

Ser Phe Val Val Lys Asp Glu Leu Trp Leu Val Met Lys Leu Leu Ser
85 90 95

Gly Gly Ser Val Leu Asp Ile Ile Lys His Ile Val Ala Lys Gly Glu
100 105 110

His Lys Ser Gly Val Leu Asp Glu Ser Thr Ile Ala Thr Ile Leu Arg
115 120 125

Glu Val Leu Glu Gly Leu Glu Tyr Leu His Lys Asn Gly Gln Ile His
130 135 140

Arg Asp Val Lys Ala Gly Asn Ile Leu Leu Gly Glu Asp Gly Ser Val
145 150 155 160

Gln Ile Ala Asp Phe Gly Val Ser Ala Phe Leu Ala Thr Gly Gly Asp
165 170 175

Ile Thr Arg Asn Lys Val Arg Lys Thr Phe Val Gly Thr Pro Cys Trp
180 185 190

Met Ala Pro Glu Val Met Glu Gln Val Arg Gly Tyr Asp Phe Lys Ala
195 200 205

Asp Ile Trp Ser Phe Gly Ile Thr Ala Ile Glu Leu Ala Thr Gly Ala
210 215 220

Ala Pro Tyr His Lys Tyr Pro Pro Met Lys Val Leu Met Leu Thr Leu
225 230 235 240

Gln Asn Asp Pro Pro Ser Leu Glu Thr Gly Val Gln Asp Lys Glu Met
245 250 255

Leu Lys Lys Tyr Gly Lys Ser Phe Arg Lys Met Ile Ser Leu Cys Leu
260 265 270

Gln Lys Asp Pro Glu Lys Arg Pro Thr Ala Ala Glu Leu Leu Arg His
275 280 285

Lys Phe Phe Gln Lys Ala Lys Asn Lys Glu Phe Leu Gln Glu Lys Thr
290 295 300

Leu Gln Arg Ala Pro Thr Ile Ser Glu Arg Ala Lys Lys Val Arg Arg
305 310 315 320

Val Pro Gly Ser Ser Gly Arg Leu His Lys Thr Glu Asp Gly Gly Trp
325 330 335

Glu Trp Ser Asp Asp Glu Phe Asp Glu Glu Ser Glu Glu Gly Lys Ala
340 345 350

Ala Ile Ser Gln Leu Arg Ser Pro Arg Val Lys Glu Ser Ile Ser Asn
355 360 365

Ser Glu Leu Phe Pro Thr Thr Asp Pro Val Gly Thr Leu Leu Gln Val
370 375 380

Pro Glu Gln Ile Ser Ala His Leu Pro Gln Pro Ala Gly Gln Ile Ala
385 390 395 400

Thr Gln Pro Thr Gln Val Ser Leu Pro Pro Thr Ala Glu Pro Ala Lys
405 410 415

Thr Ala Gln Ala Leu Ser Ser Gly Ser Gly Ser Gln Glu Thr Lys Ile
420 425 430

Pro Ile Ser Leu Val Leu Arg Leu Arg Asn Ser Lys Lys Glu Leu Asn
435 440 445

Asp Ile Arg Phe Glu Phe Thr Pro Gly Arg Asp Thr Ala Glu Gly Val
450 455 460

Ser Gln Glu Leu Ile Ser Ala Gly Leu Val Asp Gly Arg Asp Leu Val
465 470 475 480

Ile Val Ala Ala Asn Leu Gln Lys Ile Val Glu Glu Pro Gln Ser Asn
485 490 495

Arg Ser Val Thr Phe Lys Leu Ala Ser Gly Val Glu Gly Ser Asp Ile
500 505 510

Pro Asp Asp Gly Lys Leu Ile Gly Phe Ala Gln Leu Ser Ile Ser
515 520 525

<210> 58
<211> 560
<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 58

Met Val Leu Leu Lys Glu Pro Val Gln Pro Leu Pro Arg Ser Ser Leu
1 5 10 15

Leu Tyr Asn Asn Ala Ser Asn Ser Ser Ser Arg Ile Lys Glu Thr Arg
20 25 30

Lys Val Lys Leu Leu Tyr Asn Pro Leu Thr Lys Arg Gln Ile Leu Asn
35 40 45

Asn Phe Glu Ile Leu Ala Thr Leu Gly Asn Gly Gln Tyr Gly Lys Val
50 55 60

Lys Leu Ala Arg Asp Leu Gly Thr Gly Ala Leu Val Ala Ile Lys Ile
65 70 75 80

Leu Asn Arg Phe Glu Lys Arg Ser Gly Tyr Ser Leu Gln Leu Lys Val
85 90 95

Glu Asn Pro Arg Val Asn Gln Glu Ile Glu Val Met Lys Arg Cys His
100 105 110

His Glu Asn Val Val Glu Leu Tyr Glu Ile Leu Asn Asp Pro Glu Ser

115					120					125					
Thr	Lys	Val	Tyr	Leu	Val	Leu	Glu	Tyr	Cys	Ser	Arg	Gly	Pro	Val	Lys
	130					135					140				
Trp	Cys	Pro	Glu	Asn	Lys	Met	Glu	Ile	Lys	Ala	Val	Gly	Pro	Ser	Ile
145					150					155					160
Leu	Thr	Phe	Gln	Gln	Ser	Arg	Lys	Val	Val	Leu	Asp	Val	Val	Ser	Gly
				165					170					175	
Leu	Glu	Tyr	Leu	His	Ser	Gln	Gly	Ile	Thr	His	Arg	Asp	Ile	Lys	Pro
			180					185					190		
Ser	Asn	Leu	Leu	Ile	Ser	Ser	Asn	Gly	Thr	Val	Lys	Ile	Ser	Asp	Phe
		195					200					205			
Gly	Val	Ala	Met	Ser	Thr	Ala	Thr	Gly	Ser	Thr	Asn	Ile	Gln	Ser	Ser
	210					215					220				
His	Glu	Gln	Leu	Leu	Lys	Ser	Arg	Ala	Leu	Gly	Thr	Pro	Ala	Phe	Phe
225					230					235					240
Ala	Pro	Glu	Leu	Cys	Ser	Thr	Glu	Lys	Glu	Tyr	Ser	Cys	Ser	Ser	Ala
				245					250					255	
Ile	Asp	Ile	Trp	Ser	Leu	Gly	Val	Thr	Ile	Tyr	Cys	Leu	Leu	Phe	Gly
			260					265					270		
Lys	Leu	Pro	Phe	Asn	Ala	Asn	Ser	Gly	Leu	Glu	Leu	Phe	Asp	Ser	Ile
		275					280					285			
Ile	Asn	Lys	Pro	Leu	Glu	Phe	Pro	Ser	Tyr	Glu	Glu	Met	Leu	Asn	Gly
	290					295					300				
Ala	Thr	Ser	Gly	Ile	Thr	Met	Glu	Glu	Tyr	Thr	Asp	Ala	Lys	Asp	Leu
305					310					315					320
Leu	Lys	Lys	Leu	Leu	Gln	Lys	Asp	Pro	Asp	Lys	Arg	Ile	Lys	Leu	Ala
				325					330					335	
Asp	Ile	Lys	Val	His	Pro	Phe	Met	Cys	His	Tyr	Gly	Lys	Ser	Asp	Ala
			340					345					350		

Ala Ser Val Leu Thr Asn Leu Glu Thr Phe His Glu Leu Lys Val Ser
355 360 365

Pro Pro Ser Ser Cys Lys Arg Val Glu Leu Val Ser Leu Pro Val Asn
370 375 380

Ser Ser Phe Ala Ser Leu Asp Ser Val Tyr Met Glu Asn Phe Asp His
385 390 395 400

Asn Asn Leu Arg Thr Gly Ala Asp Arg Asn Ser Thr Tyr Ser Pro Ser
405 410 415

Ile Tyr Asp Ala Asn Thr Leu Ser Pro Ser Ala Tyr His Asn Ile Gly
420 425 430

Ser Arg Glu Ser Ser Tyr Ser Ser Phe Ser Ser Phe Thr Ser Ser Thr
435 440 445

Ala Phe Ala Ser Gln Ile Ser Ile Gln Asp Ala Pro Ala Ile Gly Asp
450 455 460

Gln Gln Cys Leu Ile Gly Glu Ser Gly Ser Ser Leu Arg Val Asn Ser
465 470 475 480

Cys Glu Phe Pro Gln Tyr Thr Thr Met Ser Pro Val Gly Glu Tyr Pro
485 490 495

Phe Glu Ser Thr Glu Ala Ser Leu Ser Ser Thr Leu Thr Pro Val Gly
500 505 510

Asn Val Pro Gln Arg Ile Lys Ala His Leu Val Glu Gly Lys Ser Asn
515 520 525

Ser Lys Asp Asp Leu Arg Ile Glu Ala Asp Ala Ser Leu Val Phe Glu
530 535 540

Ala Ser Asp Ala Gln Arg Thr Arg Arg Arg Met Ser Leu Tyr Lys Leu
545 550 555 560

<210> 59
<211> 1142
<212> PRT

<213> Saccharomyces cerevisiae

<400> 59

Met Asp Arg Ser Asp Lys Lys Val Asn Val Glu Glu Val Asn Val Pro
1 5 10 15

Ser Asn Leu Gln Ile Glu Leu Glu Lys Ser Gly Thr Ser Ser Ser Val
20 25 30

Ser Leu Arg Ser Pro Thr Lys Ser Ser Ala Thr Asn Leu Ala Gly Met
35 40 45

Ala Glu Gly Ala Arg Asp Asn Ala Ser Ile Ala Ser Ser Ser Val Asp
50 55 60

Ser Leu Asn Met Leu Leu Glu Arg Gln Arg Val Arg Gln Leu Asn His
65 70 75 80

Pro Gln His Gln Gln His Ile Ser Ser Ser Leu Ala Lys Thr Pro Thr
85 90 95

Thr Thr Ser Ser Phe Cys Ser Ser Gly Ser Ser Lys Asn Lys Val Lys
100 105 110

Glu Thr Asn Arg Ile Ser Leu Thr Tyr Asp Pro Val Ser Lys Arg Lys
115 120 125

Val Leu Asn Thr Tyr Glu Ile Ile Lys Glu Leu Gly His Gly Gln His
130 135 140

Gly Lys Val Lys Leu Ala Arg Asp Ile Leu Ser Lys Gln Leu Val Ala
145 150 155 160

Ile Lys Ile Val Asp Arg His Glu Lys Lys Gln Arg Lys Phe Phe Thr
165 170 175

Phe Ile Lys Ser Ser Lys Ile Ser Glu Asn Asp Lys Ile Lys Arg Glu
180 185 190

Ile Ala Ile Met Lys Lys Cys His His Lys His Val Val Gln Leu Ile
195 200 205

Glu Val Leu Asp Asp Leu Lys Ser Arg Lys Ile Tyr Leu Val Leu Glu

210

215

220

Tyr Cys Ser Arg Gly Glu Val Lys Trp Cys Pro Pro Asp Cys Met Glu
 225 230 235 240

Ser Asp Ala Lys Gly Pro Ser Leu Leu Ser Phe Gln Glu Thr Arg Glu
 245 250 255

Ile Leu Arg Gly Val Val Leu Gly Leu Glu Tyr Leu His Tyr Gln Gly
 260 265 270

Ile Ile His Arg Asp Ile Lys Pro Ala Asn Leu Leu Ile Ser Gly Asp
 275 280 285

Gly Thr Val Lys Ile Ser Asp Phe Gly Val Ser Leu Ala Ala Ser Ser
 290 295 300

Thr Asn Ser Ser Asp Ser Ser Glu Ser Leu Asp Glu Leu Glu Leu Ala
 305 310 315 320

Lys Thr Val Gly Thr Pro Ala Phe Phe Ala Pro Glu Met Cys Leu Gly
 325 330 335

Glu Asp Ala Phe Thr Arg Tyr Asn Leu Thr Lys Glu Asn Leu Phe Arg
 340 345 350

Gly Ser Cys Ile Ser Phe Met Ile Asp Ile Trp Ala Val Gly Val Thr
 355 360 365

Leu Tyr Cys Leu Leu Phe Gly Met Leu Pro Phe Phe Ser Asp Phe Glu
 370 375 380

Leu Lys Leu Phe Glu Lys Ile Val Asn Asp Pro Leu Lys Phe Pro Thr
 385 390 395 400

Phe Lys Glu Ile Gln Ser Asn Lys Val Ser Lys Val Ser Cys Glu Glu
 405 410 415

Glu Tyr Glu Met Ala Lys Asp Leu Leu Leu Lys Leu Leu Glu Lys Asn
 420 425 430

Pro Gln Lys Arg Met Thr Ile Pro Ala Ile Lys Lys His Pro Phe Val
 435 440 445

Ser Trp Asp Phe Asp His Val Pro Glu Asn Asp Glu Lys Leu Leu Ser
450 455 460

Ser Val Leu Glu Gln Lys Leu Arg Phe Gln Cys Asn Gln Thr Asp Gln
465 470 475 480

Phe Glu Pro Ile Ser Ile Ser Lys His Glu Leu Lys Asn Ala Val Ser
485 490 495

Gly Val Gly Lys Lys Ile Lys Glu Ser Val Leu Lys Ser Ile Pro Leu
500 505 510

Lys Asp Pro Ser Asp Leu Ser Asn Lys Asn Tyr Leu His Pro Thr Glu
515 520 525

Thr Thr Arg Gly Arg Gly Asp Ala Asn Val Ile Val Ser Glu Gly Ser
530 535 540

Val Leu Ser Asn Ile Lys Glu Leu Ser Ala Asn Asp Gly Cys Leu Asn
545 550 555 560

Thr Asp Ser Asp Thr Asn Ile Asn Ile Asn Asp Asp Asp His Tyr Ser
565 570 575

Gly Asp Asp Asn Asp Gly His Leu Thr Lys Arg Glu Leu Glu Arg Glu
580 585 590

Leu Asn Lys Phe Asp Asp Lys His Glu Ala Gly Asn Met Val Asn Leu
595 600 605

Pro Ile Asn Ser Ser Phe Ala Ser Leu Asp Ser Phe Tyr Ile Asp Asn
610 615 620

Phe Ala Met Ala Arg Met Gly Met Ser Ser Pro Glu Ala Gly Asp Ser
625 630 635 640

Val Ser Ser Val Pro Asn Leu Pro Ser Ala Pro Ser Ser Thr Arg Leu
645 650 655

Gly Arg Ser Pro Val Phe Ser Gly Val Thr Asn Gln Pro Ser Pro Ile
660 665 670

Arg Pro Val Leu Pro Gln Gln Lys Ser Ser Phe Cys Ala Thr Gly Arg
675 680 685

Tyr Asp Lys Ser His Asn Ser Leu Leu Arg Asn Ser Ser Ser His Leu
690 695 700

Thr Ser Tyr Asn Ser Gly Arg Pro Ser Ser Arg Thr Gly Arg Met Asn
705 710 715 720

Ser Arg Asn Gln Asn Leu Pro Lys Ile Pro Asn Ser Leu Ser Lys Ile
725 730 735

Ser Thr Thr Lys Leu Thr Glu Leu Arg Val Pro Lys Asp Ser Glu Ile
740 745 750

Pro Ser Pro Ala Lys Asn Pro Asn Ala Asp Arg Leu Arg Arg Phe Pro
755 760 765

Val Lys Lys Asn Thr Lys Thr Pro Ala Ile Lys Asp Pro Pro Arg Ile
770 775 780

Asn Ile Asn Ser Ser Asp Lys Ser Gly Ser Lys Asn Ser Pro Ile Lys
785 790 795 800

Ser Leu Tyr Gln Arg Met Lys Gln Ser Lys Asp Asn Ser Lys Thr Phe
805 810 815

Glu Val Arg Arg Gly Asn Phe Phe Ser His Phe Asn Gly Asp Asp Asp
820 825 830

Asp Ser Ser Ser Gln Ser Ser Val Thr Ser Ser Gly Ser Glu Ser Asp
835 840 845

Ser Glu Leu Ser Ser Thr Ser Ser Ser Cys Thr Ser Gly Thr Gln Ser
850 855 860

Arg Asn Ser Ser Asn Asn Asn Ala Tyr Ser Glu Thr Glu Ser Leu Pro
865 870 875 880

Phe Glu Phe Gly Val Asp Ser Glu Asp Gly Ser Gly Val Leu Leu Arg
885 890 895

Asp Leu Pro Asn Glu Asp Gln Ile Arg Pro Phe Leu Asp Ile Gln Pro
 900 905 910

Cys Arg Arg Met Lys Val Lys Ser Ser Leu Asn Leu Glu Pro Pro Ser
 915 920 925

Val Ser Ser Ser Ser Ser Ser Ser Ser Ser Asp Glu Asp Glu Leu Ile Leu
 930 935 940

Asn Val Gly Thr Ala Gly His Arg Arg Arg His Asn Ser Ser Lys Leu
 945 950 955 960

Ser Glu Leu Ser Asn Ser Pro Gln Lys Gly Ser Asn Asn Phe Met Tyr
 965 970 975

Ser Asn Gly Ser Val His Asp Ser Glu Thr Thr Ile Thr Pro Gln Asn
 980 985 990

Met Asp Asp Leu Thr Leu His Gln Ala Leu Ser Arg Ser Gln Pro Ile
 995 1000 1005

Ser Lys Pro Gly Pro Leu Val Leu Pro Lys Arg Leu Asp Gln Lys
 1010 1015 1020

Lys Ala Thr Thr Glu Thr Ser Asn Leu Thr Asp Ile Val Glu Phe
 1025 1030 1035

Asn Gly Asn Asn Asp His Arg Lys Asp Lys Asn Phe Asp Lys Val
 1040 1045 1050

Leu Tyr Ser Arg Asp Leu Leu Lys Asp Ala Leu Ser Ser Thr Asn
 1055 1060 1065

Ala Gly Arg Arg Arg Ser Ile Pro Ser Asn Lys Ile Arg Gly Arg
 1070 1075 1080

Lys Asp Ala Ser Ile Thr Met Ser Thr Asn Val Gly Asn Asp Glu
 1085 1090 1095

His Ala Arg Asn Thr Ser Cys His Gly Asp Lys Gly Gln Glu Asn
 1100 1105 1110

Gly Ala Ile Lys Gln Arg Thr His Glu Arg Ser Arg Ser Leu Thr

1115

1120

1125

Val Ala Glu Leu Asn Glu Glu Lys Arg Arg Ser Ala Leu Pro
 1130 1135 1140

<210> 60

<211> 640

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 60

Met Ser Pro Arg Gln Leu Ile Pro Thr Leu Ile Pro Glu Trp Ala Pro
 1 5 10 15

Leu Ser Gln Gln Ser Cys Ile Arg Glu Asp Glu Leu Asp Ser Pro Pro
 20 25 30

Ile Thr Pro Thr Ser Gln Thr Ser Ser Phe Gly Ser Ser Phe Ser Gln
 35 40 45

Gln Lys Pro Thr Tyr Ser Thr Ile Ile Gly Glu Asn Ile His Thr Ile
 50 55 60

Leu Asp Glu Ile Arg Pro Tyr Val Lys Lys Ile Thr Val Ser Asp Gln
 65 70 75 80

Asp Lys Lys Thr Ile Asn Gln Tyr Thr Leu Gly Val Ser Ala Gly Ser
 85 90 95

Gly Gln Phe Gly Tyr Val Arg Lys Ala Tyr Ser Ser Thr Leu Gly Lys
 100 105 110

Val Val Ala Val Lys Ile Ile Pro Lys Lys Pro Trp Asn Ala Gln Gln
 115 120 125

Tyr Ser Val Asn Gln Val Met Arg Gln Ile Gln Leu Trp Lys Ser Lys
 130 135 140

Gly Lys Ile Thr Thr Asn Met Ser Gly Asn Glu Ala Met Arg Leu Met
 145 150 155 160

Asn Ile Glu Lys Cys Arg Trp Glu Ile Phe Ala Ala Ser Arg Leu Arg
 165 170 175

Asn Asn Val His Ile Val Arg Leu Ile Glu Cys Leu Asp Ser Pro Phe
180 185 190

Ser Glu Ser Ile Trp Ile Val Thr Asn Trp Cys Ser Leu Gly Glu Leu
195 200 205

Gln Trp Lys Arg Asp Asp Asp Glu Asp Ile Leu Pro Gln Trp Lys Lys
210 215 220

Ile Val Ile Ser Asn Cys Ser Val Ser Thr Phe Ala Lys Lys Ile Leu
225 230 235 240

Glu Asp Met Thr Lys Gly Leu Glu Tyr Leu His Ser Gln Gly Cys Ile
245 250 255

His Arg Asp Ile Lys Pro Ser Asn Ile Leu Leu Asp Glu Glu Glu Lys
260 265 270

Val Ala Lys Leu Ser Asp Phe Gly Ser Cys Ile Phe Thr Pro Gln Ser
275 280 285

Leu Pro Phe Ser Asp Ala Asn Phe Glu Asp Cys Phe Gln Arg Glu Leu
290 295 300

Asn Lys Ile Val Gly Thr Pro Ala Phe Ile Ala Pro Glu Leu Cys His
305 310 315 320

Leu Gly Asn Ser Lys Arg Asp Phe Val Thr Asp Gly Phe Lys Leu Asp
325 330 335

Ile Trp Ser Leu Gly Val Thr Leu Tyr Cys Leu Leu Tyr Asn Glu Leu
340 345 350

Pro Phe Phe Gly Glu Asn Glu Phe Glu Thr Tyr His Lys Ile Ile Glu
355 360 365

Val Ser Leu Ser Ser Lys Ile Asn Gly Asn Thr Leu Asn Asp Leu Val
370 375 380

Ile Lys Arg Leu Leu Glu Lys Asp Val Thr Leu Arg Ile Ser Ile Gln
385 390 395 400

Asp Leu Val Lys Val Leu Ser Arg Asp Gln Pro Ile Asp Ser Arg Asn
405 410 415

His Ser Gln Ile Ser Ser Ser Ser Val Asn Pro Val Arg Asn Glu Gly
420 425 430

Pro Val Arg Arg Phe Phe Gly Arg Leu Leu Thr Lys Lys Gly Lys Lys
435 440 445

Lys Thr Ser Gly Lys Gly Lys Asp Lys Val Leu Val Ser Ala Thr Ser
450 455 460

Lys Val Thr Pro Ser Ile His Ile Asp Glu Glu Pro Asp Lys Glu Cys
465 470 475 480

Phe Ser Thr Thr Val Leu Arg Ser Ser Pro Asp Ser Ser Asp Tyr Cys
485 490 495

Ser Ser Leu Gly Glu Glu Ala Ile Gln Val Thr Asp Phe Leu Asp Thr
500 505 510

Phe Cys Arg Ser Asn Glu Ser Leu Pro Asn Leu Thr Val Asn Asn Asp
515 520 525

Lys Gln Asn Ser Asp Met Lys Thr Asp Arg Ser Glu Ser Ser Ser His
530 535 540

Ser Ser Leu Lys Ile Pro Thr Pro Ile Lys Ala Met Ile Arg Leu Lys
545 550 555 560

Ser Ser Pro Lys Glu Asn Gly Asn Arg Thr His Ile Asn Cys Ser Gln
565 570 575

Asp Lys Pro Ser Ser Pro Leu Met Asp Arg Thr Val Gly Lys Arg Thr
580 585 590

Val Asn Asn Ser Gly Ala Arg Lys Leu Ala His Ser Ser Asn Ile Leu
595 600 605

Asn Phe Lys Ala Tyr Ile Asn Ser Glu Asp Ser Asp Ile Arg Glu Thr
610 615 620

Val Glu Asp Val Lys Thr Tyr Leu Asn Phe Ala Asp Asn Gly Gln Ile

625

630

635

640

<210> 61
 <211> 545
 <212> PRT
 <213> Homo sapiens

<400> 61

Met Ser Ser Cys Val Ser Ser Gln Pro Ser Ser Asn Arg Ala Ala Pro
 1 5 10 15

Gln Asp Glu Leu Gly Gly Arg Gly Ser Ser Ser Ser Glu Ser Gln Lys
 20 25 30

Pro Cys Glu Ala Leu Arg Gly Leu Ser Ser Leu Ser Ile His Leu Gly
 35 40 45

Met Glu Ser Phe Ile Val Val Thr Glu Cys Glu Pro Gly Cys Ala Val
 50 55 60

Asp Leu Gly Leu Ala Arg Asp Arg Pro Leu Glu Ala Asp Gly Gln Glu
 65 70 75 80

Val Pro Leu Asp Thr Ser Gly Ser Gln Ala Arg Pro His Leu Ser Gly
 85 90 95

Arg Lys Leu Ser Leu Gln Glu Arg Ser Gln Gly Gly Leu Ala Ala Gly
 100 105 110

Gly Ser Leu Asp Met Asn Gly Arg Cys Ile Cys Pro Ser Leu Pro Tyr
 115 120 125

Ser Pro Val Ser Ser Pro Gln Ser Ser Pro Arg Leu Pro Arg Arg Pro
 130 135 140

Thr Val Glu Ser His His Val Ser Ile Thr Gly Met Gln Asp Cys Val
 145 150 155 160

Gln Leu Asn Gln Tyr Thr Leu Lys Asp Glu Ile Gly Lys Gly Ser Tyr
 165 170 175

Gly Val Val Lys Leu Ala Tyr Asn Glu Asn Asp Asn Thr Tyr Tyr Ala
 180 185 190

Met	Lys	Val	Leu	Ser	Lys	Lys	Lys	Leu	Ile	Arg	Gln	Ala	Gly	Phe	Pro	195	200	205
Arg	Arg	Pro	Pro	Pro	Arg	Gly	Thr	Arg	Pro	Ala	Pro	Gly	Gly	Cys	Ile	210	215	220
Gln	Pro	Arg	Gly	Pro	Ile	Glu	Gln	Val	Tyr	Gln	Glu	Ile	Ala	Ile	Leu	225	230	235
Lys	Lys	Leu	Asp	His	Pro	Asn	Val	Val	Lys	Leu	Val	Glu	Val	Leu	Asp	245	250	255
Asp	Pro	Asn	Glu	Asp	His	Leu	Tyr	Met	Val	Phe	Glu	Leu	Val	Asn	Gln	260	265	270
Gly	Pro	Val	Met	Glu	Val	Pro	Thr	Leu	Lys	Pro	Leu	Ser	Glu	Asp	Gln	275	280	285
Ala	Arg	Phe	Tyr	Phe	Gln	Asp	Leu	Ile	Lys	Gly	Ile	Glu	Tyr	Leu	His	290	295	300
Tyr	Gln	Lys	Ile	Ile	His	Arg	Asp	Ile	Lys	Pro	Ser	Asn	Leu	Leu	Val	305	310	315
Gly	Glu	Asp	Gly	His	Ile	Lys	Ile	Ala	Asp	Phe	Gly	Val	Ser	Asn	Glu	325	330	335
Phe	Lys	Gly	Ser	Asp	Ala	Leu	Leu	Ser	Asn	Thr	Val	Gly	Thr	Pro	Ala	340	345	350
Phe	Met	Ala	Pro	Glu	Ser	Leu	Ser	Glu	Thr	Arg	Lys	Ile	Phe	Ser	Gly	355	360	365
Lys	Ala	Leu	Asp	Val	Trp	Ala	Met	Gly	Val	Thr	Leu	Tyr	Cys	Phe	Val	370	375	380
Phe	Gly	Gln	Cys	Pro	Phe	Met	Asp	Glu	Arg	Ile	Met	Cys	Leu	His	Ser	385	390	395
Lys	Ile	Lys	Ser	Gln	Ala	Leu	Glu	Phe	Pro	Asp	Gln	Pro	Asp	Ile	Ala	405	410	415

Glu Asp Leu Lys Asp Leu Ile Thr Arg Met Leu Asp Lys Asn Pro Glu
420 425 430

Ser Arg Ile Val Val Pro Glu Ile Lys Ile Leu Val Lys Thr Met Ile
435 440 445

Arg Lys Arg Ser Phe Gly Asn Pro Phe Glu Gly Ser Arg Arg Glu Glu
450 455 460

Arg Ser Leu Ser Ala Pro Gly Asn Leu Leu Thr Lys Lys Pro Thr Arg
465 470 475 480

Glu Cys Glu Ser Leu Ser Glu Leu Lys Glu Ala Arg Gln Arg Arg Gln
485 490 495

Pro Pro Gly His Arg Pro Ala Pro Arg Gly Gly Gly Gly Ser Ala Leu
500 505 510

Val Arg Gly Ser Pro Cys Val Glu Ser Cys Trp Ala Pro Ala Pro Gly
515 520 525

Ser Pro Ala Arg Met His Pro Leu Arg Pro Glu Glu Ala Met Glu Pro
530 535 540

Glu
545

<210> 62
<211> 243
<212> PRT
<213> Artificial

<220>
<223> Consensus for figure 12

<400> 62

Pro Ser Ser Ser Ser Ser Ser Arg Ile Lys Thr Val Leu Tyr Pro Leu
1 5 10 15

Thr Lys Arg Gln Ile Leu Asn Asn Tyr Ile Leu Gly Gly Gln Tyr Gly
20 25 30

Lys Val Lys Leu Ala Asp Thr Leu Val Ala Ile Lys Ile Leu Lys Lys
35 40 45

Lys Lys Tyr Lys Asp Arg Val Lys Glu Ile Val Met Lys Arg Leu His
50 55 60

His Asn Val Val Leu Ile Glu Val Leu Asp Asp Pro Ser Lys Val Tyr
65 70 75 80

Leu Val Leu Glu Tyr Cys Ser Gly Val Trp Cys Met Glu Ile Val Pro
85 90 95

Ile Leu Ser Gln Ala Arg Val Val Asp Val Val Gly Leu Glu Tyr Leu
100 105 110

His Ser Gln Gly Ile Ile His Arg Asp Ile Lys Pro Ser Asn Ile Leu
115 120 125

Ile Ser Asp Gly Thr Val Lys Ile Ser Asp Phe Gly Val Thr Ser Asp
130 135 140

Ser Leu Arg Val Gly Thr Pro Ala Phe Ala Pro Glu Leu Cys Tyr Phe
145 150 155 160

Ile Asp Ile Trp Ser Leu Gly Val Thr Leu Tyr Cys Leu Leu Phe Gly
165 170 175

Leu Pro Phe Ala Asp Leu Leu Phe Asp Lys Ile Ile Leu Phe Pro Glu
180 185 190

Met Glu Glu Leu Lys Asp Leu Leu Lys Lys Leu Leu Glu Asn Lys Asn
195 200 205

Pro Lys Arg Ile Leu Ile Lys His Pro Phe Val Asp His Pro Asp Val
210 215 220

Leu Thr Glu Leu Lys Pro Leu Arg Val Glu Pro Val Ser Leu Lys Ser
225 230 235 240

Ser Leu Gly

<210> 63
<211> 25
<212> PRT
<213> Homo sapiens

<400> 63

Asp Phe Gly Phe Ala Lys Arg Val Lys Gly Arg Thr Trp Thr Leu Cys
1 5 10 15

Gly Thr Pro Glu Tyr Leu Ala Pro Glu
20 25

<210> 64

<211> 28

<212> PRT

<213> Homo sapiens

<400> 64

Asp Phe Gly Met Cys Lys Glu His Met Met Asp Gly Val Thr Thr Arg
1 5 10 15

Thr Phe Cys Gly Thr Pro Asp Tyr Ile Ala Pro Glu
20 25

<210> 65

<211> 27

<212> PRT

<213> Homo sapiens

<400> 65

Asp Phe Gly Leu Ser Asn Leu Tyr Gln Lys Asp Lys Phe Leu Gln Thr
1 5 10 15

Phe Cys Gly Ser Pro Leu Tyr Ala Ser Pro Glu
20 25

<210> 66

<211> 26

<212> PRT

<213> Homo sapiens

<400> 66

Asp Phe Gly Leu Ser Asn Tyr His Gln Gly Lys Phe Leu Gln Thr Phe
1 5 10 15

Cys Gly Ser Pro Leu Tyr Ala Ser Pro Glu
20 25

<210> 67

<211> 27
<212> PRT
<213> Homo sapiens

<400> 67

Asp Phe Gly Met Ala Ser Leu Gln Val Gly Asp Ser Leu Leu Glu Thr
1 5 10 15

Ser Cys Gly Ser Pro His Tyr Ala Cys Pro Glu
20 25

<210> 68
<211> 27
<212> PRT
<213> Homo sapiens

<400> 68

Asp Phe Gly Met Ala Ser Leu Gln Val Gly Asp Ser Leu Leu Glu Thr
1 5 10 15

Ser Cys Gly Ser Pro His Tyr Ala Cys Pro Glu
20 25

<210> 69
<211> 27
<212> PRT
<213> Homo sapiens

<400> 69

Asp Phe Gly Phe Gly Asn Phe Tyr Lys Ser Gly Glu Pro Leu Ser Thr
1 5 10 15

Trp Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
20 25

<210> 70
<211> 27
<212> PRT
<213> Homo sapiens

<400> 70

Asp Phe Gly Phe Gly Asn Phe Phe Lys Ser Gly Glu Leu Leu Ala Thr
1 5 10 15

Trp Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
20 25

<210> 71
<211> 27
<212> PRT
<213> Arabidopsis thaliana

<400> 71

Asp Phe Gly Leu Ser Asn Ile Met Arg Asp Gly His Phe Leu Lys Thr
1 5 10 15

Ser Cys Gly Ser Pro Asn Tyr Ala Ala Pro Glu
20 25

<210> 72
<211> 27
<212> PRT
<213> Arabidopsis thaliana

<400> 72

Asp Phe Gly Leu Ser Asn Val Met Arg Asp Gly His Phe Leu Lys Thr
1 5 10 15

Ser Cys Gly Ser Pro Asn Tyr Ala Ala Pro Glu
20 25

<210> 73
<211> 27
<212> PRT
<213> Homo sapiens

<400> 73

Asp Phe Gly Leu Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr
1 5 10 15

Ser Cys Gly Ser Pro Asn Tyr Ala Ala Pro Glu
20 25

<210> 74
<211> 27
<212> PRT
<213> Homo sapiens

<400> 74

Asp Phe Gly Leu Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr
1 5 10 15

Ser Cys Gly Ser Pro Asn Tyr Ala Ala Pro Glu
20 25

<210> 75
<211> 27
<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 75

Asp Phe Gly Leu Ser Asn Ile Met Thr Asp Gly Asn Phe Leu Lys Thr
1 5 10 15

Ser Cys Gly Ser Pro Asn Tyr Ala Ala Pro Glu
20 25

<210> 76
<211> 27
<212> PRT
<213> *Homo sapiens*

<400> 76

Asp Phe Gly Phe Ser Asn Leu Phe Thr Pro Gly Gln Leu Leu Lys Thr
1 5 10 15

Trp Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
20 25

<210> 77
<211> 29
<212> PRT
<213> *Homo sapiens*

<400> 77

Asp Phe Gly Leu Cys Ala Lys Pro Lys Gly Asn Lys Asp Tyr His Leu
1 5 10 15

Gln Thr Cys Cys Gly Ser Leu Ala Tyr Ala Ala Pro Glu
20 25

<210> 78
<211> 21
<212> PRT
<213> Artificial

<220>

<223> consensus from figure 19

<400> 78

Asp Phe Gly Leu Ser Asn Leu Gly Phe Leu Thr Ser Cys Gly Ser Pro
1 5 10 15

Tyr Ala Ala Pro Glu
20

<210> 79

<211> 27

<212> PRT

<213> Homo sapiens

<400> 79

Asp Phe Gly Phe Ser Asn Glu Phe Thr Val Gly Asn Lys Leu Asp Thr
1 5 10 15

Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
20 25

<210> 80

<211> 27

<212> PRT

<213> Homo sapiens

<400> 80

Asp Phe Gly Phe Ser Asn Glu Phe Thr Val Gly Asn Lys Leu Asp Thr
1 5 10 15

Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
20 25

<210> 81

<211> 27

<212> PRT

<213> Homo sapiens

<400> 81

Asp Phe Gly Phe Ser Asn Glu Phe Thr Val Gly Gly Lys Leu Asp Thr
1 5 10 15

Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
20 25

<210> 82

<211> 27
<212> PRT
<213> Homo sapiens

<400> 82

Asp Phe Gly Phe Ser Asn Glu Phe Thr Leu Gly Ser Lys Leu Asp Thr
1 5 10 15

Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu
20 25

<210> 83
<211> 23
<212> PRT
<213> Homo sapiens

<400> 83

Leu Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly
1 5 10 15

Ser Pro Leu Tyr Arg Arg Arg
20

<210> 84
<211> 23
<212> PRT
<213> Homo sapiens

<400> 84

Phe Gly Asn Phe Tyr Lys Ser Gly Glu Pro Leu Ser Thr Trp Cys Gly
1 5 10 15

Ser Pro Pro Tyr Arg Arg Arg
20

<210> 85
<211> 23
<212> PRT
<213> Homo sapiens

<400> 85

Leu Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr Ser Cys Gly
1 5 10 15

Ser Pro Asn Tyr Arg Arg Arg
20

<210> 86
<211> 23
<212> PRT
<213> Homo sapiens

<400> 86

Met Ala Ser Leu Gln Val Gly Asp Ser Leu Leu Glu Thr Ser Cys Gly
1 5 10 15

Ser Pro His Tyr Arg Arg Arg
20

<210> 87
<211> 23
<212> PRT
<213> Homo sapiens

<400> 87

Phe Ser Asn Glu Phe Thr Val Gly Gly Lys Leu Asp Thr Phe Cys Gly
1 5 10 15

Ser Pro Pro Tyr Arg Arg Arg
20

<210> 88
<211> 23
<212> PRT
<213> Homo sapiens

<400> 88

Ala Lys Pro Lys Gly Asn Lys Asp Tyr His Leu Gln Thr Cys Cys Gly
1 5 10 15

Ser Leu Ala Tyr Arg Arg Arg
20

<210> 89
<211> 32
<212> PRT
<213> Homo sapiens

<400> 89

Ile Ala Ala Phe Gly Ala Ser Leu Gln Val Gly Asp Ser Leu Leu Glu
1 5 10 15

Thr Ser Cys Gly Ser Pro His Tyr Ala Cys Pro Glu Arg Val Ile Arg
20 25 30

<210> 90
<211> 25
<212> PRT
<213> Homo sapiens

<400> 90

Ser Leu Gln Val Gly Asp Ser Leu Leu Glu Thr Ser Cys Gly Ser Pro
1 5 10 15

His Tyr Ala Cys Pro Glu Val Ile Arg
20 25

<210> 91
<211> 20
<212> PRT
<213> Homo sapiens

<400> 91

Phe Leu Gln Thr Phe Cys Gly Ser Pro Leu Tyr Ala Ser Pro Glu Ile
1 5 10 15

Val Asn Gly Lys
20

<210> 92
<211> 19
<212> PRT
<213> Homo sapiens

<400> 92

Leu Asp Thr Phe Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu Phe
1 5 10 15

Gln Gly Lys

<210> 93
<211> 25
<212> PRT
<213> Homo sapiens

<400> 93

Gly Asn Lys Asp Tyr His Leu Gln Thr Cys Cys Gly Ser Leu Ala Tyr
1 5 10 15

Ala Ala Pro Glu Leu Ile Gln Cys Lys
20 25

<210> 94

<211> 329

<212> PRT

<213> Schizosaccharomyces pombe

<400> 94

Met Ser Phe Leu Phe Asn Lys Arg Pro Lys Ser Thr Gln Asp Val Val
1 5 10 15

Arg Cys Leu Cys Asp Asn Leu Pro Lys Leu Glu Ile Asn Asn Asp Lys
20 25 30

Lys Lys Ser Phe Glu Glu Val Ser Lys Cys Leu Gln Asn Leu Arg Val
35 40 45

Ser Leu Cys Gly Thr Ala Glu Val Glu Pro Asp Ala Asp Leu Val Ser
50 55 60

Asp Leu Ser Phe Gln Ile Tyr Gln Ser Asn Leu Pro Phe Leu Leu Val
65 70 75 80

Arg Tyr Leu Pro Lys Leu Glu Phe Glu Ser Lys Lys Asp Thr Gly Leu
85 90 95

Ile Phe Ser Ala Leu Leu Arg Arg His Val Ala Ser Arg Tyr Pro Thr
100 105 110

Val Asp Tyr Met Leu Ala His Pro Gln Ile Phe Pro Val Leu Val Ser
115 120 125

Tyr Tyr Arg Tyr Gln Glu Val Ala Phe Thr Ala Gly Ser Ile Leu Arg
130 135 140

Glu Cys Ser Arg His Glu Ala Leu Asn Glu Val Leu Leu Asn Ser Arg
145 150 155 160

Asp Phe Trp Thr Phe Phe Ser Leu Ile Gln Ala Ser Ser Phe Asp Met
165 170 175

Ala Ser Asp Ala Phe Ser Thr Phe Lys Ser Ile Leu Leu Asn His Lys
180 185 190

Ser Gln Val Ala Glu Phe Ile Ser Tyr His Phe Asp Glu Phe Phe Lys
195 200 205

Gln Tyr Thr Val Leu Leu Lys Ser Glu Asn Tyr Val Thr Lys Arg Gln
210 215 220

Ser Leu Lys Leu Leu Gly Glu Ile Leu Leu Asn Arg Ala Asn Arg Ser
225 230 235 240

Val Met Thr Arg Tyr Ile Ser Ser Ala Glu Asn Leu Lys Leu Met Met
245 250 255

Ile Leu Leu Arg Asp Lys Ser Lys Asn Ile Gln Phe Glu Ala Phe His
260 265 270

Val Phe Lys Leu Phe Val Ala Asn Pro Glu Lys Ser Glu Glu Val Ile
275 280 285

Glu Ile Leu Arg Arg Asn Lys Ser Lys Leu Ile Ser Tyr Leu Ser Ala
290 295 300

Phe His Thr Asp Arg Lys Asn Asp Glu Gln Phe Asn Asp Glu Arg Ala
305 310 315 320

Phe Val Ile Lys Gln Ile Glu Arg Leu
325

<210> 95
<211> 399
<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 95

Met Phe Lys Lys Tyr Lys Asn Gln Asp Leu Asp Met Ala Phe Trp Trp
1 5 10 15

Lys Lys Asn Pro Lys Thr Pro Ser Asp Tyr Ala Arg Leu Ile Ile Glu
20 25 30

Gln Leu Asn Lys Phe Ser Ser Pro Ser Leu Thr Gln Asp Asn Lys Arg
35 40 45

Lys Val Gln Glu Glu Cys Thr Lys Tyr Leu Ile Gly Thr Lys His Phe
50 55 60

Ile Val Gly Asp Thr Asp Pro His Pro Thr Pro Glu Ala Ile Asp Glu
65 70 75 80

Leu Tyr Thr Ala Met His Arg Ala Asp Val Phe Tyr Glu Leu Leu Leu
85 90 95

His Phe Val Asp Leu Glu Phe Glu Ala Arg Arg Glu Cys Met Leu Ile
100 105 110

Phe Ser Ile Cys Leu Gly Tyr Ser Lys Asp Asn Lys Phe Val Thr Val
115 120 125

Asp Tyr Leu Val Ser Gln Pro Lys Thr Ile Ser Leu Met Leu Arg Thr
130 135 140

Ala Glu Val Ala Leu Gln Gln Lys Gly Cys Gln Asp Ile Phe Leu Thr
145 150 155 160

Val Gly Asn Met Ile Ile Glu Cys Ile Lys Tyr Glu Gln Leu Cys Arg
165 170 175

Ile Ile Leu Lys Asp Pro Gln Leu Trp Lys Phe Phe Glu Phe Ala Lys
180 185 190

Leu Gly Asn Phe Glu Ile Ser Thr Glu Ser Leu Gln Ile Leu Ser Ala
195 200 205

Ala Phe Thr Ala His Pro Lys Leu Val Ser Lys Glu Phe Phe Ser Asn
210 215 220

Glu Ile Asn Ile Ile Arg Phe Ile Lys Cys Ile Asn Lys Leu Met Ala
225 230 235 240

His Gly Ser Tyr Val Thr Lys Arg Gln Ser Thr Lys Leu Leu Ala Ser
245 250 255

Leu Ile Val Ile Arg Ser Asn Asn Ala Leu Met Asn Ile Tyr Ile Asn

260

265

270

Ser Pro Glu Asn Leu Lys Leu Ile Met Thr Leu Met Thr Asp Lys Ser
 275 280 285

Lys Asn Leu Gln Leu Glu Ala Phe Asn Val Phe Lys Val Met Val Ala
 290 295 300

Asn Pro Arg Lys Ser Lys Pro Val Phe Asp Ile Leu Val Lys Asn Arg
 305 310 315 320

Asp Lys Leu Leu Thr Tyr Phe Lys Thr Phe Gly Leu Asp Ser Gln Asp
 325 330 335

Ser Thr Phe Leu Asp Glu Arg Glu Phe Ile Val Gln Glu Ile Asp Ser
 340 345 350

Leu Pro Arg Ile Ile Ser Ser Thr Thr Glu Val Ser Asn Asn Asn Ala
 355 360 365

Ser Ser Ser Asn Val Ala Ser Ile Thr Ser Pro Ser Ser Val Met Asn
 370 375 380

Asn Gln Ser Ser Ile Leu Thr His Ser Thr Ser Pro Asp Ser Arg
 385 390 395

<210> 96

<211> 343

<212> PRT

<213> Arabidopsis thaliana

<400> 96

Met Arg Gly Leu Phe Lys Ser Lys Pro Arg Thr Pro Ala Asp Ile Val
 1 5 10 15

Arg Gln Thr Arg Asp Leu Leu Leu Tyr Ala Asp Arg Ser Asn Ser Phe
 20 25 30

Pro Asp Leu Arg Glu Ser Lys Arg Glu Glu Lys Met Val Glu Leu Ser
 35 40 45

Lys Ser Ile Arg Asp Leu Lys Leu Ile Leu Tyr Gly Asn Ser Glu Ala
 50 55 60

Glu Pro Val Ala Glu Ala Cys Ala Gln Leu Thr Gln Glu Phe Phe Lys
65 70 75 80

Ala Asp Thr Leu Arg Arg Leu Leu Thr Ser Leu Pro Asn Leu Asn Leu
85 90 95

Glu Ala Arg Lys Asp Ala Thr Gln Val Val Ala Asn Leu Gln Arg Gln
100 105 110

Gln Val Asn Ser Arg Leu Ile Ala Ala Asp Tyr Leu Glu Ser Asn Ile
115 120 125

Asp Leu Met Asp Phe Leu Val Asp Gly Phe Glu Asn Thr Asp Met Ala
130 135 140

Leu His Tyr Gly Thr Met Phe Arg Glu Cys Ile Arg His Gln Ile Val
145 150 155 160

Ala Lys Tyr Val Leu Asp Ser Glu His Val Lys Lys Phe Phe Tyr Tyr
165 170 175

Ile Gln Leu Pro Asn Phe Asp Ile Ala Ala Asp Ala Ala Thr Phe
180 185 190

Lys Glu Leu Leu Thr Arg His Lys Ser Thr Val Ala Glu Phe Leu Ile
195 200 205

Lys Asn Glu Asp Trp Phe Phe Ala Asp Tyr Asn Ser Lys Leu Leu Glu
210 215 220

Ser Thr Asn Tyr Ile Thr Arg Arg Gln Ala Ile Lys Leu Leu Gly Asp
225 230 235 240

Ile Leu Leu Asp Arg Ser Asn Ser Ala Val Met Thr Lys Tyr Val Ser
245 250 255

Ser Met Asp Asn Leu Arg Ile Leu Met Asn Leu Leu Arg Glu Ser Ser
260 265 270

Lys Thr Ile Gln Ile Glu Ala Phe His Val Phe Lys Leu Phe Val Ala
275 280 285

Asn Gln Asn Lys Pro Ser Asp Ile Ala Asn Ile Leu Val Ala Asn Arg
290 295 300

Asn Lys Leu Leu Arg Leu Leu Ala Asp Ile Lys Pro Asp Lys Glu Asp
305 310 315 320

Glu Arg Phe Asp Ala Asp Lys Ala Gln Val Val Arg Glu Ile Ala Asn
325 330 335

Leu Lys Leu Arg Glu Leu Ala
340

<210> 97
<211> 8
<212> PRT
<213> Artificial

<220>
<223> FLAG peptide

<400> 97

Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 98
<211> 15
<212> PRT
<213> Artificial

<220>
<223> Bovine MBP fragment

<400> 98

Gly His His Ala Ala Arg Thr Thr His Tyr Gly Ser Leu Pro Gln
1 5 10 15

<210> 99
<211> 73
<212> DNA
<213> Artificial

<220>
<223> PCR primer

<400> 99

ggatccgccca ccatggagca gaagctgata tctgaagagg acttgccgtt cccgtttggg 60

aagtctcaca aat 73

<210> 100
<211> 34
<212> DNA
<213> Artificial

<220>
<223> PCR primer

<400> 100
ggatccttaa gcttcttgct gagctggtct cttc

34

<210> 101
<211> 78
<212> DNA
<213> Artificial

<220>
<223> PCR primer

<400> 101
caccgatcc gccaccatgg agcagaagct gatctctgaa gaggacttgc ctttgtttag
taaatacacac aaaaatcc

60

78

<210> 102
<211> 34
<212> DNA
<213> Artificial

<220>
<223> PCR primer

<400> 102
ggatcctcaa ggggccgttt tcttcaagtc tcgg

34

<210> 103
<211> 69
<212> DNA
<213> Artificial

<220>
<223> PCR primer

<400> 103
ggatccgccca ccatggacta caaggacgac gatgacaagt catttcttgt aagtaaacca
gagcgaatc

60

69

<210> 104
<211> 35
<212> DNA
<213> Artificial

<220>
 <223> PCR prime

 <400> 104
 ggatcctcag aactcccaat cgtccacctc cagct 35

 <210> 105
 <211> 68
 <212> DNA
 <213> Artificial

 <220>
 <223> PCR prime

 <400> 105
 ggatccgcca ccatggacta caaggacgac gatgacaagt ctcttttgga ttgcttctgc 60
 atttcaag 68

 <210> 106
 <211> 36
 <212> DNA
 <213> Artificial

 <220>
 <223> PCR primer

 <400> 106
 ggatccctag aattcccagt atgagtcttt ttcata 36

 <210> 107
 <211> 66
 <212> DNA
 <213> Artificial

 <220>
 <223> PCR primer

 <400> 107
 actagtgccca ccatggacta caaggacgac gatgacaaga agtcatcgg caagtacctg 60
 atgggg 66

 <210> 108
 <211> 36
 <212> DNA
 <213> Artificial

 <220>
 <223> PCR primer

 <400> 108

actagttcag tcctccaggt agggcactac agtcat

36

<210> 109
<211> 14
<212> PRT
<213> Homo sapiens

<400> 109

Cys Asp Pro Met Lys Arg Ala Thr Ile Lys Asp Ile Arg Glu
1 5 10

<210> 110
<211> 22
<212> PRT
<213> Homo sapiens

<400> 110

Leu Ser Asn Met Met Ser Asp Gly Glu Phe Leu Arg Thr Ser Cys Gly
1 5 10 15

Ser Pro Asn Arg Arg Arg
20

<210> 111
<211> 13
<212> PRT
<213> Rattus rattus

<400> 111

Lys Phe Leu Arg Thr Ser Cys Gly Ser Pro Asn Tyr Ala
1 5 10

<210> 112
<211> 25
<212> DNA
<213> Homo sapiens

<400> 112
actgcagccc tggagcccag gaagc

25

<210> 113
<211> 30
<212> DNA
<213> Homo sapiens

<400> 113
ctagttgagc ttgctgcaga tctccagcgc

30

<210> 114
<211> 69
<212> DNA
<213> Homo sapiens

<400> 114
actagtgccca ccatgtaccc atacgatgtg ccagattacg ccgaaggggc cgccgcgctt 60
gtggcgggg 69

<210> 115
<211> 30
<212> DNA
<213> Homo sapiens

<400> 115
ctagttgagc ttgctgcaga tctccagcgc 30

<210> 116
<211> 69
<212> DNA
<213> Homo sapiens

<400> 116
actagtgccca ccatgtaccc atacgatgtg ccagattacg ccgagtcgct ggttttcgcg 60
cggcgctcc 69

<210> 117
<211> 33
<212> DNA
<213> Homo sapiens

<400> 117
tcaggtagc tttgagcaga ccctcagtc ctg 33

<210> 118
<211> 55
<212> DNA
<213> Homo sapiens

<400> 118
gcgtcgacta cccatacgat gtgccagatt acgccgtcat ggcggatggc ccgag 55

<210> 119
<211> 55
<212> DNA
<213> Homo sapiens

<400> 119
gcactagtta cccatacgat gtgccagatt acgccgtcat ggcggatggc ccgag 55

<210> 120
 <211> 36
 <212> DNA
 <213> Homo sapiens

 <400> 120
 gagcggccgc taattcacca ggacataccc gttgtg 36

<210> 121
 <211> 60
 <212> DNA
 <213> Homo sapiens

 <400> 121
 gcggatccta cccatacgat gtgccagatt acgccgttat catgtcggag ttcagcgcgg 60

<210> 122
 <211> 34
 <212> DNA
 <213> Homo sapiens

 <400> 122
 gagcggccgc tcaactgcacc aggacaaacg tgcc 34

<210> 123
 <211> 75
 <212> DNA
 <213> Homo sapiens

 <400> 123
 gcggatccta cccatacgat gtgccagatt acgccaaaga ttatgatgaa cttctcaaat 60
 attatgaatt acatg 75

<210> 124
 <211> 41
 <212> DNA
 <213> Homo sapiens

 <400> 124
 gtgcggccgc ttataccttg cagctagata ggatgtcttc c 41

<210> 125
 <211> 69
 <212> DNA
 <213> Homo sapiens

 <400> 125
 ccacccccac ccaccccagc acgccaata tgtgggcccc tatcggctgg agaagacgct 60

gggcaaagg 69

<210> 126
<211> 31
<212> DNA
<213> Homo sapiens

<400> 126
cgatgcagcc tctcgcggtc cctgaagcag c 31

<210> 127
<211> 31
<212> DNA
<213> Homo sapiens

<400> 127
gctgcttcag ggaccgcgag aggctgcatc g 31

<210> 128
<211> 28
<212> DNA
<213> Homo sapiens

<400> 128
tcagggcaga ggggtcccgt tgggtggcc 28

<210> 129
<211> 67
<212> DNA
<213> Homo sapiens

<400> 129
ggtgggggct ctcccgcccta ccacctcccc cccccccacc cccacccacc ccagcacgcc 60
caatatg 67

<210> 130
<211> 76
<212> DNA
<213> Homo sapiens

<400> 130
ggatcctacc catacgatgt gccagattac gcctcgtccg gggccaagga gggagggtggg 60
ggctctcccg cctacc 76

<210> 131
<211> 25
<212> DNA
<213> Homo sapiens

<400> 131
gcggatccta cccatacgat gtgcc 25

<210> 132
<211> 69
<212> DNA
<213> Homo sapiens

<400> 132
ggatccgccca ccatgtaccc atacgatgtg ccagattacg ccacatcgac ggggaaggac 60
ggcggcgcg 69

<210> 133
<211> 57
<212> DNA
<213> Homo sapiens

<400> 133
gcggccgctc agaggctact ctcgtagctg gtggccacct tctggccctt aagccca 57

<210> 134
<211> 90
<212> DNA
<213> Homo sapiens

<400> 134
ggagccgggc ccgcgggccg cctgctgcct ccgcccgcgc cgggggtcccc agccgcccc 60
gctgccgtgt cccctgcggc cggccagccg 90

<210> 135
<211> 41
<212> DNA
<213> Homo sapiens

<400> 135
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<210> 136
<211> 87
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ggagccgggc ccgcgggccg cctgctg 87

<210> 137
<211> 55

<212> DNA
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 <210> 138
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 <212> DNA
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 ggcagccctc cctatgctgc acctgaactc 90

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 <400> 141
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 <210> 142
 <211> 54
 <212> DNA
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<213> Homo sapiens

<400> 143

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37

<210> 144

<211> 37

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<213> Homo sapiens

<400> 144

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<211> 41

<212> DNA

<213> Homo sapiens

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41

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<211> 54

<212> DNA

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54

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<212> DNA

<213> Homo sapiens

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43

<210> 148

<211> 56

<212> DNA

<213> Homo sapiens

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56

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<211> 56

<212> DNA

<213> Homo sapiens

<400> 149

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gccccggg 68

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<400> 155
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<213> Artificial

<220>
<223> Artificial AMPK kinase substrate

<400> 157

Ala Met Ala Arg Ala Ala Ser Ala Ala Ala Leu Ala Arg Arg Arg
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<210> 158
<211> 23
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<400> 158

Leu Ser Asn Leu Tyr His Gln Gly Lys Phe Leu Gln Thr Phe Cys Gly
1 5 10 15

Ser Pro Leu Tyr Arg Arg Arg
20